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2 Maps - F1 - Hydraulic Probe & Sediment / Surface Water Location Map ; F2 - Water Table Map (11/15/95)

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Rev. 07/10/02

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
TECHNICAL MEMORANDUM 3

BELOIT CORPORATION
BLACKHAWK FACILITY
ROCKTON, ILLINOIS

APRIL 1996

PREPARED FOR:
BELOIT CORPORATION
ROCKTON, ILLINOIS

•••

PREPARED BY:
MONTGOMERY WATSON
MADISON, WISCONSIN

PROJECT NO. 3856.0125

MONTGOMERY WATSON

MONTGOMERY WATSON

April 11, 1996

Mr. Eric Runkel
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Re: Phase III Remedial Investigation
Beloit Corporation - Blackhawk Facility
Rockton, Illinois

Dear Mr. Runkel:

On behalf of Beloit Corporation, Montgomery Watson is submitting three copies of the final Technical Memorandum 3 for the Beloit Corporation - Blackhawk Facility NPL Site. This Technical Memorandum presents the data and results of the Phase III investigation which was conducted during November, 1995. This Technical Memorandum presents sampling and analytical methods and summaries only, without interpretation. Therefore, the document is considered final and we do not anticipate any modifications.

With exception of proposed boring W43C, this Phase III Investigation completes the RI. We look forward to preparing the RI document following the completion of boring W43C data. Please contact us if you have any questions.

Sincerely,

MONTGOMERY WATSON

Jeff Ramsby (KJQ)

R. Jeff Ramsby
Project Hydrogeologist

Kenneth J. Quinn
Principal Hydrogeologist

cc: Mr. Kevin Domack - Harnischfeger Industries, Inc. (1 copy)
Mr. Dennis Hays - Beloit Corporation (1 copy)
Mr. Russell Hebb - Beloit Corporation (1 copy)
Mr. Doug McLeish - Beloit Corporation (1 copy)
Mr. Frederick Mueller - Johnson and Bell (2 copy)
Mr. Kevin Phillips - Ecology and Environment (3 copies)
Mr. Terry Ayres - IEPA (1 copy)
Mr. Paul Jagiello - IEPA (1 copy)
Ms. Susan Horn - IAG (1 copy)
Ms. Mary Tierney - U.S. EPA (3 copies)
Ms. Eileen Furey - U.S. EPA (1 copy, w/o enclosures)

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Serving the World's Environmental Needs

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
TECHNICAL MEMORANDUM 3

BELOIT CORPORATION
BLACKHAWK FACILITY
ROCKTON, ILLINOIS

APRIL 1996

R. Jeff Ramsby
Hydrogeologist

Kenneth J. Quinn
Principal Hydrogeologist

TABLE OF CONTENTS

LIST OF TABLES

LIST OF DRAWINGS

LIST OF APPENDICES

1

INVESTIGATION ACTIVITIES

The Phase III Investigation was conducted in accordance with the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) of 1980, as amended by Superfund Amendments and Reauthorization Act (SARA) (U.S. EPA), as required by the Consent Decree (Civil Action No. 91 C 20137) dated May 8, 1991 and per the approved Illinois Environmental Protection Agency (IEPA) scope of work outlined in the site planning documents dated October 1995 which includes the Quality Assurance Project Plan (QAPP) and the Health and Safety Plan (HSP). Oversight of the RI/FS is presently being conducted by Ecology and Environment, Inc. on behalf of the IEPA.

The primary objectives of the Phase III RI were to collect data to adequately characterize the facility and adjacent areas for the development and evaluation of final remedial alternatives. This included further delineation of the extent of VOCs to the west of the erection on the Beloit Corporation Plant (BCP), east of the Blackhawk Acres subdivision, and south of the RI boundary. In addition, data was collected on the sediment and surface water quality in the Rock River to finalize the Ecological Assessment (EA).

Due to access restrictions in the railroad corridor south of the RI boundary, boring (W43C) has not been completed. This boring will be completed as soon as the conditions of access have been negotiated for access obtained with IEPA assistance, and, thereby, complete the RI.

The field work completed in accordance with the approved Work Plan to achieve the Phase III objectives of the RI, include the following activities (details of the Phase 3 activities are contained in Appendix A):

- conduct three groundwater quality borings at three locations. Boring W29C was conducted along the southeastern portion of the Blackhawk Acres Subdivision to delineate the eastern edge of VOCs. A piezometer (W29C) was installed at this location based on groundwater screening results (no detections) and the conditions of the Work Plan. Boring W42C was conducted west of the erection bay to determine if VOCs were migrating west toward the wetland areas and Rock River. A water table monitoring well (W42) was installed at this location based on groundwater screening results (no detections) and the conditions of the Work Plan. As mentioned above, boring W43C has not been completed due to access related difficulties;

- develop the two newly installed wells (W29C and W42);

- conduct six hydraulic probe borings (HP01 through HP06) west of the erection bay and collect a groundwater sample at each location to be screened using the field gas chromatograph (GC) Groundwater was collected from the approximate upper two feet of the water table. A partial round of water levels was conducted in conjunction with this task to identify groundwater flow directions during the boring program. The six contingency locations were not conducted and a water table monitoring well was not installed based on no detections in the original six groundwater samples collected, and the conditions of the Work Plan;

- install three staff gauges (SG08 through SG10);

- survey the new wells, hydraulic probe borings and staff gauges for location and elevation;

- collect sediment samples at ten locations (SD01 through SD10) along the Rock River and its backwater areas. The samples were collected at locations where Montgomery Watson personnel and the IEPA representative agreed were the approximate location shown on Drawing 10024910-F17 of the Work Plan. Locations of samples SD03 and SD07 were not adjusted based on no detections during the groundwater investigation, and the conditions of the Work Plan;

- collect one surface water sample at the approximate location depicted on Drawing 10024910-F17 of the Work Plan. (SD06 location);

- conduct one full round of water level measurements during the sediment/surface water sampling task (week prior to Round III water quality sampling). These measurements were intended to be used to adjust the location of SD03 and SD07, if there had been detections in samples from the hydraulic probe borings;

- sample 28 wells for TCL VOCs;

- and conduct hydraulic conductivity tests at the two newly installed wells (W29C and W42).

Summary tables are included for the various data generating activities including water level data, well information, and physical and analytical testing laboratory results, etc.

Drawings depicting site features and investigative sampling locations (Drawing F1), and a water table map based on measurements recorded November 15, 1995 (Drawing F2) are included.

Appendices containing supporting documentation including boring logs, well construction and development information, data quality summary, chemical and physical laboratory results, hydraulic conductivity testing results, geophysical logs, etc., are included. Appendix A (Summary of Work Performed) describes methods utilized and data collection activities for the various tasks which were conducted, as required by the Work Plan (October, 1995).

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TABLES

TABLE 1

Results for Field Volatile Organics Screening
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

Well	Depth (ft)		Alkenes					Alkanes			Aromatics				
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	1,1,1-TCA	1,2-DCA	1,1-DCA	Benzene	Toluene	Ethylbenzene	m+p Xylene	o-Xylene
W29C	29	ND													
"	39	ND													
"	49	ND													
"	59	ND													
"	69	ND													
W29C Dup	69	ND													
W42C	21	ND													
"	29	ND													
"	39	ND													
"	49	ND													
"	59	ND													
W42C Dup	59	ND													
W42C	63	ND													
HP01	7.5	ND													
HP02	7.5	ND													
HP03	7.5	ND													
HP04	7.5	ND													
HP05	7.5	ND													
HP06	7.5	ND													

This table presents a summary of field Gas Chromatograph (GC) volatile organic compound analysis of groundwater quality boring samples collected October 31 through November 9, 1995 at the Beloit Corporation Blackhawk Facility.

Notes:
Results are presented in units of ug/L.
ND indicates target compounds were not detected at a concentration greater than the method reporting limit of 5 ug/L for water samples.
All data generated by field GC is considered as tentatively identified, with concentration being estimated.

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TABLE 2

Summary of Grain Size Analysis and Hydraulic Conductivity Testing
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

Collection Point	Sample No.	Sample Type	Sample Depth (ft)	% Gravel	% Sand	% Silt + % Clay		USCS	Hydraulic Conductivity (2)
						% Silt	% Clay		
W29C	69	Grab	69	0.0	97.6	1.3	1.1	SP	2.7 x 10 - 03
W42	30	Grab	30	32.5	46.1	12.2	9.2	SM	9.8 x 10 - 05
SD01	(1)	Jar	(1)	38.4	49.9	7.2	4.5	SP-SM	NA
SD02	(1)	Jar	(1)	34.5	47.9	9.6	8.0	SM	NA
SD03	(1)	Jar	(1)	0.0	53.7	32.2	14.1	SM	NA
SD04	(1)	Jar	(1)	16.8	58.3	11.1	13.8	SM	NA
SD05	(1)	Jar	(1)	0.0	9.8	70.3	19.9	ML	NA
SD06	(1)	Jar	(1)	0.0	38.5	32.9	28.6	SM	NA
SD07	(1)	Jar	(1)	0.0	62.2	30.5	7.3	SM	NA
SD08	(1)	Jar	(1)	42.0	56.3	0.8	0.9	SP	NA
SD09	(1)	Jar	(1)	74.5	22.5	1.6	1.4	GP	NA
SD10	(1)	Jar	(1)	35.1	63.0	0.4	1.5	SP	NA

Notes:
Grab = Sample collected as cuttings exited the drill rig cyclone.
Jar = Sample collected using a hand auger.
Geotechnical analytical reports are included in Appendix C.
Hydraulic conductivity test results are included in Appendix H.

Footnotes:
(1) Sediment samples were collected from the approximate upper 6 in. of sediment.
(2) Result are reported in units of cm/sec.

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TABLE 3

Well Information Form
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

Well ID	Coordinates		Well Depth [12]	Ground Elevation	Screen Length [13]	Well Type	Well Material	Year Installed	Top of Casing Elevation	Top of Protective Casing Elevation
	Northing	Easting								
W1R	2116809.4	797781.8	25.6	747.1	10	W	2" PVC/SS	1994	749.41	749.34
W2	2114080.5	796589.3	37.0	752.9	10	W	2" PVC	1983	755.03	755.51
W3R	2113822.4	795756.7	29.1	744.0	10	W	2" PVC/SS	1992	746.25	746.43
W5R	2113828.5	795755.9	57.7	744.0	5	P	2" PVC/SS	1992	746.16	746.43
W6	2115090.0	795860.0	38.4	745.2	10	W	2" PVC	1984	747.79	747.83
W7	2116047.6	796956.8	33.4	749.1	10	W	2" PVC	1984	751.29	751.40
W8R	2115777.3	799691.7	51.6	771.9	10	W	2" PVC/SS	1992	774.93	775.13
W9	2115360.0	797315.0	34.5	752.7	10	W	2" PVC	1984	754.76	754.82
W10	2115363.5	797333.5	57.7	752.6	5	P	2" PVC	1984	754.74	754.89
W11R	2115770.7	799690.6	61.1	771.9	5	P	2" PVC/SS	1992	774.92	775.36
W12R	2113737.2	796402.8	37.5	754.1	10	W	2" PVC/SS	1994	756.56	756.49
W13	2114475.0	796834.0	30.0	753.1	10	W	2" SS	1987	755.34	755.61
W14	2114475.5	796834.3	58.4	752.6	5	P	2" SS	1987	753.89	754.23
W15	2115935.0	797650.0	30.5	751.0	10	W	2" SS	1987	753.41	753.60
W16R	2115808.3	798055.6	39.8	758.8	10	W	2" PVC/SS	1992	761.59	761.85
W17	2116470.0	796690.0	15.5	732.8	10	W	2" SS	1987	735.57	735.85
W18	2113721.0	796617.6	75.0	746.1	5	P	2" SS	1989	748.48	748.28
W19	2113068.7	795439.2	27.3	742.1	10	W	2" PVC/SS	1992	744.74	745.07
W19B	2113068.6	795430.3	57.1	742.1	5	P	2" PVC/SS	1992	744.72	744.98
W20R	2114198.2	795748.4	27.3	743.9	10	W	2" PVC/SS	1992	747.08	747.20
W20B	2114207.4	795746.7	51.7	743.9	5	P	2" PVC/SS	1992	746.56	746.85
W21	2114472.9	795972.7	30.0	747.8	10	W	2" PVC/SS	1992	750.23	750.29
W21B	2114467.1	795974.5	60.1	747.8	5	P	2" PVC/SS	1992	750.37	750.52
W22	2114216.6	796509.5	34.5	754.9	10	W	2" PVC/SS	1992	757.90	758.03
W22B	2114209.9	796506.9	60.2	754.9	5	P	2" PVC/SS	1992	758.05	758.22
W22C	2114210.1	796514.5	73.1	754.9	5	P	2" PVC/SS	1992	757.69	757.98
W23	2115143.4	796336.9	33.9	753.9	10	W	2" PVC/SS	1992	753.52	753.83
W23B	2115136.3	796335.1	49.8	753.7	5	P	2" PVC/SS	1992	753.32	753.64
W24	2116665.0	798525.0	32.1	752.3	10	W	2" PVC/SS	1992	755.55	755.43
W25C	2113792.5	795761.0	72.9	744.2	5	P	2" PVC/SS	1992	746.76	747.05
W26	2113339.1	796150.2	36.7	751.9	10	W	2" PVC/SS	1994	754.16	754.09
W26C	2113338.8	796153.6	77.0	751.9	5	P	2" PVC/SS	1992	754.61	754.73
W27	2114579.6	798024.9	50.4	764.8	10	W	2" PVC/SS	1992	767.29	767.45
W28	2115719.2	796771.7	32.4	752.8	10	W	2" PVC/SS	1992	752.43	752.96
W29	2113195.0	797019.3	30.6	747.6	10	W	2" PVC/SS	1992	751.16	751.40
W29C	2113240.7	797023.7	69.5	748.4	5	P	2" PVC/SS	1995	747.90	748.36
W31C	2115103.8	796672.9	52.2	754.1	5	P	2" PVC/SS	1994	753.75	754.08
W32	2115112.8	797025.9	30.5	754.1	10	W	2" PVC/SS	1994	756.54	756.53
W34	2115019.1	796861.9	36.8	753.8	5	W	2" PVC/SS	1994	753.45	753.78
W35C	2115284.3	796752.7	70.0	754.3	5	P	2" PVC/SS	1994	754.01	754.34
W37	2115134.9	797758.1	40.1	758.1	10	W	2" PVC/SS	1994	757.68	758.06

TABLE 3

Well Information Form
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

Well ID	Coordinates		Well Depth [2]	Ground Elevation	Screen Length [3]	Well Type	Well Material	Year Installed	Top of Casing Elevation	Top of Protective Casing Elevation
	Northing	Easting								
W38	2114467.1	795785.5	35.2	742.8	10	P	2" PVC/SS	1994	745.26	745.19
W39	2115344.2	796631.0	31.8	754.3	10	W	2" PVC/SS	1994	753.85	754.33
W40	2115335.4	796865.2	32.3	754.3	10	W	2" PVC/SS	1994	753.68	754.32
W41	2114557.3	796642.6	34.4	754.9	10	W	2" PVC/SS	1994	754.38	754.85
W42	2115221.8	796106.0	24.5	746.9	10	W	2" PVC/SS	1995	749.68	749.61
W44C	2113650.4	796886.3	57.4	747.2	5	P	2" PVC/SS	1995	746.80	747.18
W45	2113968.2	796179.1	39.9	753.6	10	W	2" PVC	1995	756.37	756.26
W46	2113397.3	795735.8	34.6	745.2	10	W	2" PVC/SS	1995	748.39	748.28
G101	2112670.0	798680.0	52.3	763.7	15	W	2" PVC	1984	766.45	NA
G103S	2113721.0	796617.0	25.8	746.4	5	W	2" SS	1986	748.94	749.09
G103D	Unknown	Unknown	49.0	746.1	5	P	2" SS	1986	747.96	748.10
G104	2113795.0	795690.0	25.0	741.7	5	W	2" SS	1986	744.64	744.78
G107	2116860.0	799170.0	48.7	769.3	5	W	2" SS	1986	771.31	771.41
G108S	2112535.0	797165.0	39.8	754.0	5	W	2" SS	1987	756.90	757.07
G108D	Unknown	Unknown	71.6	753.8	5	P	2" SS	1987	756.34	756.49
G109	2113560.0	795380.0	17.4	735.6	5	W	2" SS	1987	739.05	739.22
G110	2113240.0	795000.0	19.8	735.6	5	W	2" SS	1987	738.26	738.42
P1	2113850.0	795200.0	20.0	732.4	10	P	2"PVC	1986	734.73	NA
SG6	2116513.1	796661.8	NA	NA	NA	NA	NA	1994	725.03 [4]	NA
SG7	2114067.4	794767.5	NA	NA	NA	NA	NA	1994	724.58 [4]	NA
SG8	2116349.0	795548.3	NA	NA	NA	NA	NA	1995	725.20 [4]	NA
SG9	2115211.4	795036.2	NA	NA	NA	NA	NA	1995	724.61 [4]	NA
SG10	2112752.8	794633.8	NA	NA	NA	NA	NA	1995	724.32 [4]	NA

Notes:

2" PVC = 2" Poly vinyl chloride well screen and casing
2" SS = 2" Stainless steel well screen and casing
2" PVC/SS = 2" poly vinyl chloride well casing and 2" stainless steel screen (10' stainless steel riser directly above screen in piezometers).
NA = Not applicable

Footnotes:

(1) All elevations shown are in ft. MSL (Mean Sea Level).
(2) Well depth relative to ground surface.
(3) Screen lengths are shown as general measurements. For exact screen lengths, see Appendix E of Tech Memo 3 for wells installed in 1995, Appendix F of Tech Memo 2 for wells installed in 1994 and Appendices C and D of Tech Memo 1 for wells existing prior to Phase II of the RI/FS.
(4) Elevation shown is the "zero" mark on staff gauges.

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TABLE 4

Water Level Summary

Beloit Corporation - Blackhawk Facility

Remedial Investigation/Feasibility Study - Phase III

Well ID	Elevation Top of PVC (ft MSL)	Depth To SWL 2-24-95 (ft)	Elevation SWL 2-24-95 (ft MSL)	Depth To SWL 4-14-95 (ft)	Elevation SWL 4-14-95 (ft MSL)	Depth To SWL 6-23-95 (ft)	Elevation SWL 6-23-95 (ft MSL)	Depth To SWL 11-9-95 (1) (ft)	Elevation SWL 11-9-95 (1) (ft MSL)	Depth To SWL 11-15-95 (ft)	Elevation SWL 11-15-95 (ft MSL)
W1R	749.41	21.52	727.89	21.71	727.70	20.52	728.89	NR	NR	20.82	728.59
W2	755.03	30.12	724.91	30.93	724.10	28.37	726.66	NR	NR	29.83	725.20
W3R	746.25	23.71	722.54	23.61	722.64	22.36	723.89	NR	NR	22.86	723.39
W5R	746.16	23.69	722.47	23.49	722.67	22.41	723.75	NR	NR	22.68	723.48
W6	747.79	22.45	725.34	21.81	725.98	22.05	725.74	21.67	726.12	21.37	726.42
W7	751.29	23.11	728.18	23.29	728.00	21.77	729.52	22.19	729.10	21.96	729.33
W8R	774.93	45.82	729.11	46.17	728.76	45.40	729.53	NR	NR	45.52	729.41
W9	754.76	26.78	727.98	29.19	725.57	25.11	729.65	NR	NR	25.92	728.84
W10	754.74	26.76	727.98	27.17	727.57	25.09	729.65	NR	NR	25.88	728.86
W11R	774.92	45.82	729.10	46.17	728.75	45.41	729.51	NR	NR	45.50	729.42
W12R	756.56	33.11	723.45	33.58	722.98	31.69	724.87	NR	NR	32.84	723.72
W13	755.34	28.32	727.02	28.51	726.83	26.44	728.90	NR	NR	26.84	728.50
W14	753.89	27.05	726.84	27.52	726.37	25.37	728.52	NR	NR	26.06	727.83
W15	753.41	24.49	728.92	24.70	728.71	23.11	730.30	NR	NR	24.02	729.39
W16R	761.59	32.95	728.64	33.40	728.19	31.78	729.81	NR	NR	32.55	729.04
W17	735.57	9.93	725.64	9.11	726.46	9.64	725.93	NR	NR	8.64	726.93
W18	748.48	25.16	723.32	25.51	722.97	23.55	724.93	NR	NR	24.47	724.01
W19	744.74	23.8	720.94	23.40	721.34	22.40	722.34	NR	NR	22.36	722.38
W19B	744.72	23.78	720.94	23.36	721.36	22.40	722.32	NR	NR	22.32	722.40
W20R	746.56	23.3	723.26	23.13	723.43	22.08	724.48	NR	NR	22.49	724.07
W20B	747.08	23.85	723.23	23.65	723.43	22.68	724.40	NR	NR	22.98	724.10
W21	750.23	26.12	724.11	26.15	724.08	24.88	725.35	NR	NR	25.56	724.67
W21B	750.37	26.28	724.09	26.19	724.18	25.15	725.22	NR	NR	25.56	724.81
W22	757.90	32.71	725.19	33.60	724.30	31.05	726.85	NR	NR	32.53	725.37
W22B	758.05	33.24	724.81	33.96	724.09	31.59	726.46	NR	NR	32.91	725.14
W22C	757.69	33.40	724.29	33.95	723.74	31.88	725.81	NR	NR	33.04	724.65
W23	753.52	26.20	727.32	26.05	727.47	24.55	728.97	24.80	728.72	24.62	728.90
W23B	753.32	26.27	727.05	26.23	727.09	24.89	728.43	NR	NR	25.10	728.22
W24	755.55	27.05	728.50	27.25	728.30	26.12	729.43	NR	NR	26.43	729.12
W25C	746.76	24.35	722.41	24.15	722.61	23.08	723.68	NR	NR	23.34	723.42
W26	754.16	32.76	721.40	32.76	721.40	31.33	722.83	NR	NR	31.85	722.31
W26C	754.61	33.11	721.50	33.05	721.56	31.73	722.88	NR	NR	32.16	722.45

TABLE 4

Water Level Summary

Beloit Corporation - Blackhawk Facility

Remedial Investigation/Feasibility Study - Phase III

Well ID	Elevation Top of PVC (ft MSL)	Depth To SWL 2-24-95 (ft)	Elevation SWL 2-24-95 (ft MSL)	Depth To SWL 6-23-95 (ft)	Elevation SWL 4-14-95 (ft MSL)	Depth To SWL 4-14-95 (ft)	Elevation SWL 6-23-95 (ft MSL)	Depth To SWL 11-9-95 (ft)	Elevation SWL 11-9-95 (ft MSL)	Depth To SWL 11-15-95 (ft)	Elevation SWL 11-15-95 (ft MSL)
W27	767.29	40.00	727.29	40.56	726.73	38.58	728.71	NR	NR	39.28	728.01
W28	752.43	23.89	728.54	23.92	728.51	22.19	730.24	22.53	729.90	22.22	730.21
W29	751.16	29.11	722.05	29.36	721.80	27.64	NA	NR	NR	28.14	723.02
W29C	747.90	NA	NA	NA	NA	NA	NA	NR	NR	23.85	724.05
W31C	753.75	26.21	727.54	26.55	727.20	24.65	729.10	NR	NR	25.18	728.57
W32	756.54	28.90	727.64	29.27	727.27	27.20	729.34	NR	NR	27.88	728.66
W34	753.45	25.78	727.67	26.16	727.29	24.12	729.33	NR	NR	24.32	729.13
W35C	754.01	26.28	727.73	26.56	727.45	24.81	729.20	NR	NR	25.20	728.81
W37	757.68	29.89	727.79	30.42	727.26	28.50	729.18	NR	NR	29.11	728.57
W38	745.26	21.52	723.74	21.31	723.95	20.42	724.84	20.95	724.31	20.77	724.49
W39	753.85	26.02	727.83	26.43	727.42	24.57	729.28	NR	NR	25.26	728.59
W40	753.68	25.73	727.95	26.11	727.57	24.20	729.48	NR	NR	24.78	728.90
W41	754.38	27.36	727.02	27.86	726.52	25.71	728.67	NR	NR	26.47	727.91
W42	749.68	NA	NA	NA	NA	NA	NA	20.65	729.03	20.66	729.02
W44C	746.80	NA	NA	NA	NA	NA	NA	NR	NR	21.42	725.38
W45	756.37	NA	NA	NA	NA	NA	NA	NR	NR	32.45	723.92
W46	748.39	NA	NA	NA	NA	NA	NA	NR	NR	25.79	722.60
G101	766.45	43.83	722.62	44.15	722.30	43.03	723.42	NR	NR	43.30	723.15
G103S	748.94	24.56	724.38	25.20	723.74	22.26	726.68	NR	NR	24.18	724.76
G103D	747.96	23.63	724.33	24.25	723.71	21.54	726.42	NR	NR	23.21	724.75
G104	744.64	22.17	722.47	21.95	722.69	20.85	723.79	NR	NR	21.15	723.49
G107	771.31	45.42	725.89	43.03	728.28	41.92	729.39	NR	NR	42.28	729.03
G108S	756.90	37.08	719.82	37.19	719.71	35.79	721.11	NR	NR	36.18	720.72
G108D	756.34	36.49	719.85	36.60	719.74	35.21	721.13	NR	NR	35.58	720.76
G109	739.05	17.05	722.00	16.59	722.46	15.79	723.26	NR	NR	15.63	723.42
G110	738.26	17.01	721.25	16.36	721.90	15.67	722.59	NR	NR	15.25	723.01
P1	734.73	12.27	722.46	11.69	723.04	11.14	723.59	NR	NR	10.82	723.91

TABLE 4

Water Level Summary

Beloit Corporation - Blackhawk Facility

Remedial Investigation/Feasibility Study - Phase III

Staff Gauge	Elevation of "ZERO" Mark on the Staff Gauge (ft MSL)	Staff Gauge Reading 2-24-95 (ft)	Elevation of Surface Water 2-24-95 (ft MSL)	Staff Gauge Reading 6-23-95 (ft)	Elevation of Surface Water 4-14-95 (ft MSL)	Staff Gauge Reading 4-14-95 (ft)	Elevation of Surface Water 6-23-95 (ft MSL)	Staff Gauge Reading 11-9-95 (ft)	Elevation of Surface Water 11-9-95 (ft MSL)	Staff Gauge Reading 11-15-95 (ft)	Elevation of Surface Water 11-15-95 (ft MSL)
SG6	725.22	ICE	ICE	0.64	725.86	0.21	725.43	NR	NR	1.35	726.57
SG7	724.71	ICE	ICE	0.80	725.51	0.71	725.42	NR	NR	1.42	726.13
SG8	725.20	NA	NA	NA	NA	NA	NA	NA	NA	1.17	726.37
SG9	724.61	NA	NA	NA	NA	NA	NA	NA	NA	1.47	726.08
SG10	724.32	NA	NA	NA	NA	NA	NA	NA	NA	1.76	726.08

Notes:
SWL = Static Water Level
MSL = Mean Seal Level
NA = Not Applicable; not installed.
NR = Not Recorded

Fotonotes:
(1) Selected wells measured for groundwater flow referance during hydraulic probe borings conducted on November 9, 1995.

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TABLE 5

Summary of Soil Physical Parameters
Beloit Corporation - Blackhawk Facility
Remedial Investigation / Feasibility Study - Phase III

Parameter	TOC mg/kg	pH SU
SD01	15000	7.40
SD02	5500	7.45
SD03	9700	7.48
SD04	5100	7.32
SD05	> 16000	6.73
SD06	9600	7.08
SD07	>16000	6.96
SD08	2100	7.24
SD09	>16000	7.69
SD10	4700	7.69
W44C 59'	14000	NA
W29C 69'	12000	NA
W42 30'	>16000	NA

This table presents a summary of Physical parmater analyses performed on non-aqueous samples collected in Phase III of the Beloit Corporation RI/FS.

TABLE 6

Summary of Detected Compounds - Sediments
Beloit Corporation - Blackhawk Facility RI/FS
Remedial Investigation/Feasibility Study - Phase III

Parameter	UNITS	SD01	SD02	SD03	SD04	SD04 Dup	SD05	SD06	SD07	SD08	SD09	SD10
VOLATILES												
2-Butanone	ug/kg				11		4		36			
Acetone	ug/kg				69		20	22	160		18	
Ethylbenzene	ug/kg								150			
Xylenes (total)	ug/kg								110			
SEMIVOLATILES												
2-Methylnaphthalene	ug/kg								48000			
4-Methylphenol	ug/kg										110	
Acenaphthene	ug/kg								40000			
Acenaphthylene	ug/kg								7600		140	
Anthracene	ug/kg								42000		230	
Benzo(a)anthracene	ug/kg		60						38000		500	
Benzo(a)pyrene	ug/kg		75						30000		460	
Benzo(b)fluoranthene	ug/kg								20000		230	
Benzo(g,h,i)perylene	ug/kg		41						12000		190	
Benzo(k)fluoranthene	ug/kg								17000		360	
Chrysene	ug/kg		60						35000		490	
Di-n-butylphthalate	ug/kg							310				
Dibenz(a,h)anthracene	ug/kg								5600		86	
Dibenzofuran	ug/kg								7400			
Fluoranthene	ug/kg		52	54					64000		840	55
Fluorene	ug/kg								27000		46	
Indeno(1,2,3-cd)pyrene	ug/kg								10000		180	
Naphthalene	ug/kg								24000			
Phenanthrene	ug/kg								100000		280	
Pyrene	ug/kg		83	70					84000		1100	89

TABLE 6

Summary of Detected Compounds - Sediments
Beloit Corporation - Blackhawk Facility RI/FS
Remedial Investigation/Feasibility Study - Phase III

Parameter	UNITS	SD01	SD02	SD03	SD04	SD04 Dup	SD05	SD06	SD07	SD08	SD09	SD10
METALS												
Aluminum	mg/kg	2130	3170	4550	5710	5560	9480	10600	7570	1150	3850	1880
Arsenic	mg/kg	0.73	1.5	1.1	1.4	1.1	1.6	1.7	7.3	0.76	2.1	0.48
Barium	mg/kg	8.4	11.9	81.8	54.9	52.8	166	107	135	6.9	25	8.7
Cadmium	mg/kg			1.6	1.3	2.2	3	3.9	2.5		1.2	
Calcium	mg/kg	83600	68000	75700	1900	1760	5350	4630	72000	14000	34000	39000
Chromium, total	mg/kg	4.3	5.3	7.8	7.9	7.3	14.5	17.5	13.9		7.2	3.6
Cobalt	mg/kg	2.9	4.1	4.6	4.6	3.9	8.6	7.2	6.4		3.7	
Copper	mg/kg	3.4	7.8	3.8	6.6	5.9	13.9	8.2	40.6		7	
Iron	mg/kg	4320	6110	8890	10900	11000	13600	20000	12600	3430	7140	3520
Lead	mg/kg	2.8	3.5	4.6	5	4.1	11.5	8	94	1.6	8.8	3.5
Magnesium	mg/kg	43400	30600	15100	2050	1930	2690	3780	13900	7950	19000	19200
Manganese	mg/kg	199	157	414	128	123	728	594	392	53.5	153	88.3
Mercury	mg/kg	0.05	0.05	0.06	0.05	0.06	0.06		4.1	0.05		0.07
Nickel	mg/kg		5.5	8.1	11.2	8.6	12.2	12.8	18.8		7.2	
Potassium	mg/kg	439	533	441	439	428	658	722	841	150	399	243
Selenium	mg/kg						0.54		0.85			
Thallium	mg/kg		0.15	0.16	0.18	0.18	0.25	0.24	0.44		0.15	
Vanadium	mg/kg				14.8	14.9	16.6	22.1			13.9	
Zinc	mg/kg	12.7	20.6	29.6	32.4	31	80.9	48	156	7.6	23.9	13.6
Total Organic Carbon	mg/kg	15000	5500	9700	3100		> 16000	9600	>16000	2100	>16000	4700
pH	SU	7.4	7.45	7.48	7.32		6.73	7.08	6.96	7.24	7.69	7.69
Total Solids	%	87.1	87.4	73.6	77.4	79.8	66.7	75.8	39.8	73.9	83.3	82.1

Notes:
This table presents a summary of all inorganic target analyte list (TAL) and organic target compound list (TCL) detects in sediment samples collected in Phase III of the Beloit Corporation RI/FS. Only those parameters detected in at least one sample are included here.

Units for each parameter are presented. A blank indicates the compound was not detected in that sample. Refer to Appendix G for complete analytical reports for Phase III sampling.

TABLE 7

Vertical Gradient Calculations
Beloit Corporation - Blackhawk Facility
Remedial Investigation/ Feasibility Study - Phase III

WELL I.D.	SCREEN INTERVAL TOP	SCREEN INTERVAL BOTTOM	SCREEN MIDPOINT	LEVEL (11-15-95)	WELL I.D.	VERTICAL GRADIENT (11-15-95)
G103S	726.1	721.1	723.6	724.76	G103S/G103D	0.000
G103D	702.5	697.1	699.8	724.75	G103D/W18	-0.032
W18	679.1	674.1	676.6	724.01	G103S/W18	-0.016
G108S	719.7	714.7	717.2	720.72	G108S/G108D	0.001
G108D	687.6	682.7	685.2	720.76		
W3R	725.1	714.9	720.0	723.39	W3R/W5R	0.003
W5R	691.5	686.3	688.9	723.48	W5R/W25C	-0.003
W25C	676.5	671.3	673.9	723.42	W3R/W25C	0.001
W9	728.2	718.2	723.2	728.84	W9/W10	0.001
W10	699.9	694.9	697.4	728.86		
W8R	730.5	720.3	725.4	729.41	W8R/W11R	0.001
W11R	716.0	710.8	713.4	729.42		
W13	733.1	723.1	728.1	728.50	W13/W14	-0.021
W14	698.8	694.2	696.5	727.83		
W19	725.0	714.8	719.9	722.38	W19/W19B	0.001
W19B	690.2	685.0	687.6	722.40		
W20R	726.8	716.6	721.7	724.07	W20R/W20B	0.001
W20B	697.4	692.2	694.8	724.10		
W21	728.0	717.8	722.9	724.67	W21/W21B	0.004
W21B	692.9	687.7	690.3	724.81		
W22	730.6	720.4	725.5	725.37	W22/W22B	-0.008
W22B	699.9	694.7	697.3	725.14	W22B/W22C	-0.038
W22C	687.0	681.8	684.4	724.65	W22/W22C	-0.018
W23	730.2	720.0	725.1	728.90	W23/W23B	-0.030
W23B	709.1	703.9	706.5	728.22		
W26	725.5	715.2	720.4	722.31	W26/W26C	0.003
W26C	680.1	674.9	677.5	722.45		
W29	727.2	717.0	722.1	723.02	W29/W29C	0.025
W29C	684.4	678.9	681.7	724.05		

Notes:
(-) = Downward Vertical Gradient
(+) = Upward Vertical gradient
Water Levels Collected by Montgomery Watson on November 15, 1995

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TABLE 8

Summary of Organic Compounds Detected in Groundwater
Beloit Corporation - Blackhawk Facility
Remedial Investigation / Feasibility Study - Phase III

Sample	Screen placement	1,1,1-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	Chloromethane	Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	1,2-Dichloroethene (total)	Acetone
MCL		**200**	--	**5**	--	**5**	**5**	**7**	**70**	**770**
BC-GWG108D-01	I									
BC-GWG108D-02	I				18					
BC-GWG108D-92	I									
BC-GWG108D-03	I						2			
BC-GWW03R-01	S	6	1			**5**				
BC-GWW03R-02	S					**8**				
BC-GWW03R-03	S	2				**8**				
BC-GWW05R-01	I	45	7			**12**	3	3		
BC-GWW05R-02	I	34	3			**33**	**9**		3	
BC-GWW05R-03	I	48				**22**	**7**	6		
BC-GWW18-01	D	4					**24**			
BC-GWW18-91	D	4					**20**			
BC-GWW18-02	D	8					**36**			
BC-GWW18-03	D	8					**27**			
BC-GWW19-01	S	2								
BC-GWW19-02	S									
BC-GWW19-03	S	3								
BC-GWW21-01	S	22	2			**31**	**19**			
BC-GWW21-02	S	17				**90**	**23**			
BC-GWW21-03	S	22				**44**	**30**			
BC-GWW21B-01	I	25					2			
BC-GWW21B-02	I	160					**16**	**26**		
BC-GWW21B-03	I	30					**9**	2	3	
BC-GWW21B-93	I	23					**6**	3	3	
BC-GWW23-01	S					**3,000**				
BC-GWW23-02	S					**4,300**				
BC-GWW23-03	S					**1,600**				
BC-GWW23B-01	I	47		320		**970**	33			
BC-GWW23B-02	I					**1,600**	**60**		**480**	
BC-GWW23B-03	I	21				**1,600**	**61**		**470**	
BC-GWW25C-01	D	10					1			
BC-GWW25C-02	D	110				11	4	**8**		
BC-GWW25C-03	D	45				3	4	6		

TABLE 8

Summary of Organic Compounds Detected in Groundwater
Beloit Corporation - Blackhawk Facility
Remedial Investigation / Feasibility Study - Phase III

Sample	Screen placement	1,1,1-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	Chloromethane	Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	1,2-Dichloroethene (total)	Acetone
BC-GWW26C-01	D	16					**61**			
BC-GWW26C-02	D	50					**160**	3		
BC-GWW26C-03	D	33					**110**	5		
BC-GWW31C-02	I	9				**60**			2	
BC-GWW31C-03	I	19				**72**	2	6	4	
BC-GWW34-02	S					**23**				
BC-GWW34-92	S					**20**				
BC-GWW34-03	S					**12**				
BC-GWW38-02	S				81	**370**				
BC-GWW38-03	S	6				**250**	5			
BC-GWW41-02	S	18				**130**				
BC-GWW41-03	S	9				**31**				
BC-GWW41-93	S	9				**31**				
BC-GWFB02-03										9
BC-GWFB03-03						**83**	2		3	3

This table presents a summary of all organic compounds detected in groundwater samples collected in Phases I, II, and III of the Beloit Corporation RI/FS. All rounds are presented to allow comparison of results over time. Only those groundwater wells and volatiles compounds detected in at least one sample are included here.

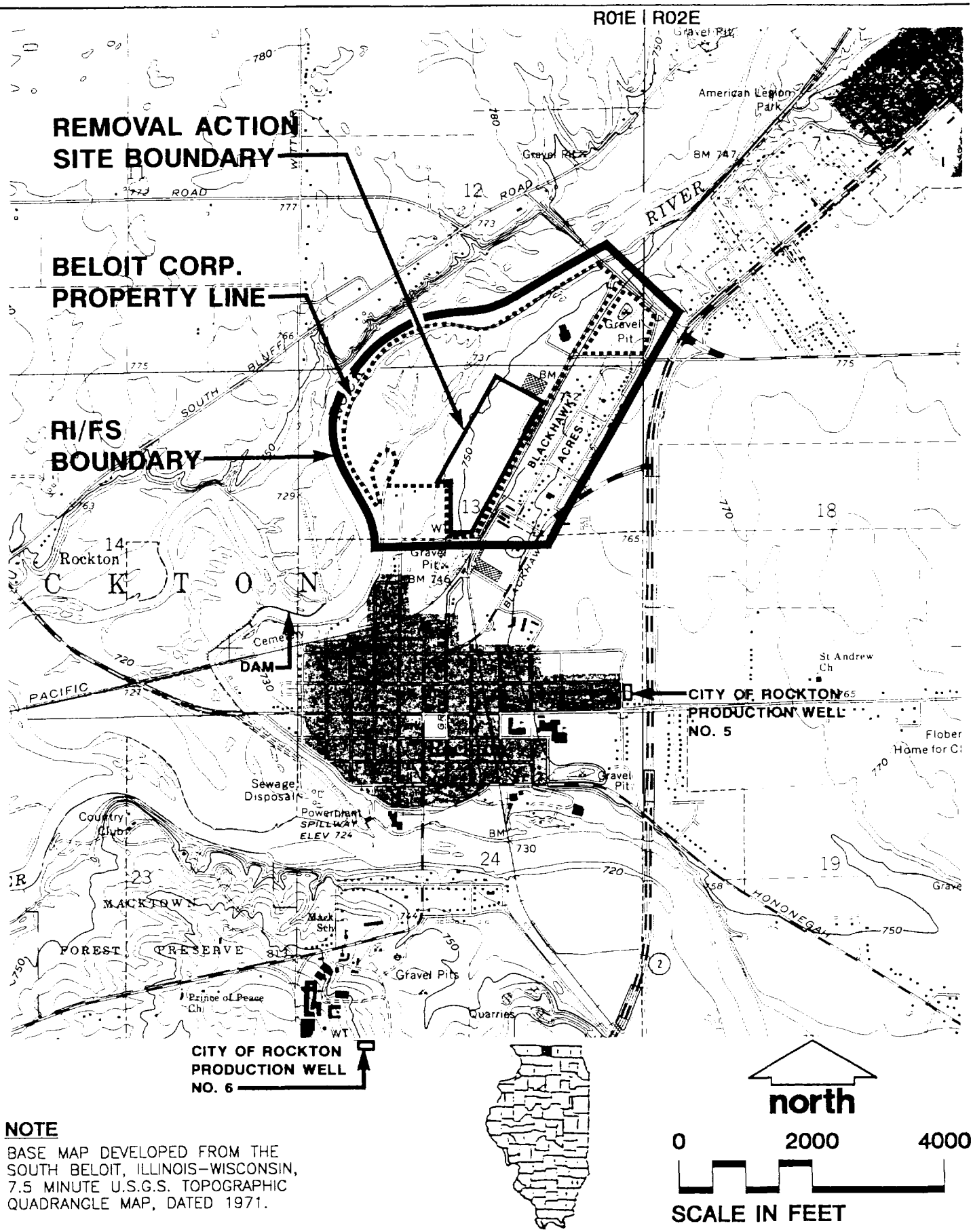
MCL indicates U.S.EPA Maximum Contaminant Levels.

Screen Placement indicates Shallow (S), Intermediate (I), or Deep (D) wells.

Results are presented in units of ug/L. A blank indicates the compound was not detected in that sample. Refer to Appendix G for complete analytical reports for Phase III sampling.

BC-GWFB03-03 - This field blank was collected through the Keck pump immediately after collecting samples from monitoring wells MW23B and MW23 (the two wells with the greatest concentrations). PCE and several additional compounds were detected in this field blank. No additional samples were collected after this trip blank. As such, results from GWF03-03 were not used to qualify data from any of the round three samples. Note the results for FB01-03 and FB02-03 were both acceptable, with only minor detects of acetone in FB02-03.

DRAWINGS



NOTE

BASE MAP DEVELOPED FROM THE SOUTH BELOIT, ILLINOIS–WISCONSIN, 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1971.

Developed By RJR	Drawn By DLF	**SITE LOCATION MAP**	Drawing Number 3856.0125 A1
Approved By	Date 4-10-96	REMEDIAL INVESTIGATION/FEASIBILITY STUDY PHASE III BELOIT CORPORATION BLACKHAWK FACILITY SECTIONS 12 AND 13, T46N, R1E TOWN OF ROCKTON, WINNEBAG CO., ILLINOIS	MONTGOMERY WATSON
Reference			
Revisions			

QUALITY CONTROL | Graphic Standards DLF 3-22-96 | Lead Professional RJR 4-2-96 | Technical Review | Project Manager KJQ 4-9-96 | Management Review | Other

A

SUMMARY OF WORK PERFORMED

SUMMARY OF WORK PERFORMED

The work performed for Phase 3 of the RI was conducted in accordance with the Statement of Work (Attachment 1 of the Consent Decree) and the work plan documents. This section describes the field tasks, performed during the RI. The Work Plan was created based on a chronological sequence of activities. This attachment is arranged in the appropriate order in which tasks occurred, as listed:

- Groundwater Quality Borings
- Borehole Geophysics
- Monitoring Well Installation
- Monitoring Well Development
- Hydraulic Probe Groundwater Sampling
- Staff Gauge Installation
- Location and Elevation Survey
- Sediments
- Surface Water
- Water Level Measurements
- Round 3 Groundwater Sampling
- Hydraulic Conductivity Testing
- Equipment Decontamination Procedures
- Data Reporting

GROUNDWATER QUALITY BORINGS

Two deep groundwater quality borings (W39C and W42C) were performed between November 1 and 7, 1995. These borings were the initial Phase of the groundwater investigation portion of the Phase III Work Scope. These borings were used to evaluate vertical and horizontal distribution of groundwater chemistry. The borings were drilled to approximately 70 ft at the locations shown on Drawing F1. Depths actually drilled in the field were based on stratigraphy. Drilling and groundwater sampling was discontinued at a boring when the lacustrine clay layer had been reached.

Dual-tube reverse circulation drilling methods were used to advance the groundwater quality borings. As outlined in the Work Plan, the boring logs were based on discharge drill cuttings kept by the supervising geologist and supplemented by the natural gamma log. Boring logs are included in Appendix B.

During drilling, groundwater samples were collected at approximately 10-ft intervals with supplemental samples collected at critical geologic contacts. Sand heaved into the drill string at some sample intervals. The purpose of purging the drill string prior to sampling is to remove groundwater that may have been affected by the drilling methods. The sand that heaved into the drill string came from the same area as the purge water would have. Therefore, the heaved sand would have been in contact with the groundwater. Furthermore, after the sand had heaved into the drill string, groundwater was still purged prior to sampling. This purge water can be considered in situ water that moved with the sand and was replaced by additional water entering the bottom of the drill string. Three volumes of groundwater were purged at each sampling interval prior to sample collection. One volume consists of the standing column of groundwater within the inner tube of the dual tube drilling system. This volume was purged using a stainless steel bailer. Groundwater samples were collected through the center of the drill string using the stainless steel bailer. Groundwater samples collected from the two borings were screened for VOCs using the field GC screening method. The GC data from the groundwater samples was used to obtain a vertical profile of groundwater quality at drilling locations.

Drilling was halted as soon as there was evidence of having contacted the clay layer, by having clay soil return through the drill rig cyclone. (Since the contact -vs- return times are not instantaneous, approximately 6 in. to 1 ft of clay had usually been drilled, prior to halting drilling). The drill string would then be pulled back approximately 6 in. to 1 ft to allow groundwater to enter the drill string. The groundwater sample was then collected. Groundwater screening results are summarized on Table 1.

Equipment used to purge and sample groundwater was decontaminated prior to each sample interval. Bailers were washed with an Alconox solution followed by triple rinsing with potable water.

Upon completion of each borehole, downhole geophysical logging was performed to obtain a natural gamma ray log. The natural gamma ray log of the borehole was used in conjunction with cuttings and grain size analyses for interpretation of subsurface soil stratigraphy.

Drill cuttings, fluids, and purge water derived from the activities mentioned above were screened with an 11.7 eV PID and contained in labeled 55-gal drums for future disposition.

Boring W42C, in which monitoring well W42 was installed, was backfilled from the total depth of the boring to the bottom of well W42. This backfill used a combination of chipped bentonite and natural caving, because no confining units were present. Documentation of the abandonment is included in Appendix C.

Grain size distribution and TOC samples were collected from near the screened interval for each well installed. Based on the rationale for well placement, the depth that each well was to be installed was not known until the boring had been completed. Therefore, samples could not be collected from the exact screened depth. However, a sufficient number of samples were collected to allow submission from a satisfactory depth interval. Grain size distribution results are contained in Appendix D and summarized on Table 2.

BOREHOLE GEOPHYSICS

The natural gamma ray logging tool was used at groundwater quality boring W42 and at well W29C, following well completion. This tool was used in order to differentiate and identify soil stratigraphic units and variations in clay content in the soil matrix. Natural gamma ray responses were used in conjunction with visual soil descriptions and soil grain size analyses to create final borehole logs. The natural gamma ray detecting probe was advanced to the bottom of the borehole (W42C) and well (W29C) at a logging rate of less than 1 ft/sec at each location logged. A duplicate log was then created by returning the probe to the surface, while logging. Total depths were recorded by direct measurement and by the measuring device incorporated into the logging tool. Appendix E contains natural gamma logs.

MONITORING WELL INSTALLATION

Two new monitoring wells were installed, including one water table well (W42) and one piezometer (W29C), in the completed groundwater quality borings.

Monitoring wells were installed using reverse air circulation dual tube drilling. The water table well (W42) was constructed with 10-ft long, number 10 slot (0.010-in.) continuous wrap 2-in. I.D. stainless steel screen placed so the screen intercepted the water table. The piezometer (W29C) was constructed with 5-ft long number 10 slot (0.010-in.) continuous wrap 2-in. I.D. stainless steel screen with a 10-ft section of stainless steel riser directly above the screen. The riser above the 10-ft stainless steel section consisted of 2-in. I.D. Schedule 40 PVC.

The annular space between the well and the edge of the borehole was backfilled with clean silica sand to approximately 2 ft above the top of the well screen. For both the water table well and piezometer approximately 2 ft of fine silica sand was placed above the sand filter pack. A minimum 3-ft of hydrated ⅜-in. bentonite chip seal was placed directly above the fine silica sand. At the water table well, the annulus above the chip seal was also backfilled

with chipped bentonite. At the piezometer, bentonite slurry, using a tremie pipe, and 3/8-in bentonite chips were placed above the seal. A locking steel protective casing and granular bentonite surface seal were installed at W42, which required a stickup protective cover. An aluminum flush mount protector and concrete surface seal, with a locking watertight cap on the well casing, were installed at W29C. Well construction documentation is contained in Appendix F. Table 3 includes a summary of well construction information.

MONITORING WELL DEVELOPMENT

Monitoring wells were developed between November 8 and 13, 1995 by alternately surging and purging for a minimum of 30 min. with a bailer. After completion of the surge and purge cycles, the well development was completed by purging a minimum of ten well volumes (five well volumes for wells that could be bailed dry). Wells were purged by use of a bailer and a submersible pump. Development documentation is contained in Appendix G.

Purge water from development was contained in 55-gal drums and stored on-site. Disposition of the purge water was based on field GC screening results and was disposed to the Rockton POTW.

HYDRAULIC PROBE GROUNDWATER SAMPLING

Six hydraulic probe borings were conducted on November 9, 1995. These borings were the final phase of the groundwater investigation portion of the Phase 3 Work Scope. Hydraulic probe borings were advanced to approximately 2 ft below the water table (6 to 7.5 ft BGS). The rods were then withdrawn, and a screened interval of rod was placed in the boring. A section of teflon tubing was placed below the water table and a groundwater sample was withdrawn using a pumping device. The groundwater samples were analyzed using the field GC screening method. Following completion, the borings were backfilled using granular bentonite and were later surveyed for ground elevation and location.

Groundwater elevations were collected from selected wells located in the areas adjacent to the hydraulic probe borings. These measurements would have been used to locate contingency hydraulic probe borings. No VOCs were detected, therefore, these measurements were not used and therefore, have not been prepared in map form. The measurements are, however, summarized on Table 4. Hydraulic probe boring locations are shown on Drawing F1. Groundwater screening results are summarized on Table 1.

Decontamination and triple rinsing with potable water of boring tools and drill rods was performed prior to each boring. New teflon tubing was used to collected each sample.

STAFF GAUGE INSTALLATION

Staff gauges SG8, SG9, and SG10 were installed on November 10, 1995 at locations shown on Drawing F1. The staff gauges were installed prior to the sediment sampling task.

LOCATION AND ELEVATION SURVEY

Horizontal and vertical control surveys were performed on November 13 and 14, 1995 by Vierbicher Associates of Reedsburg, Wisconsin. New monitoring wells, staff gauges, and hydraulic probe borings were surveyed. The survey was conducted following the groundwater investigation and prior to the sediment sampling task.

Horizontal controls for each location were made to an accuracy of ±1 ft and tied into the state plane coordinate system. Vertical elevations for ground surface at each location were surveyed to an accuracy of ±0.1 ft MSL and for the top of protective casing and PVC to an accuracy of ±0.01 ft MSL, as summarized on Table 3. Elevations were tied to U.S. Coast and Geodetic Survey Monument E221 located within the RI boundary (see Drawing F1).

SEDIMENTS

Ten sediment samples (SD01 through SD10) were collected to complete the EA and BRA. The sediment samples were collected on November 14 and 15, 1995 from the Rock River and its backwater areas at the approximate locations shown on Drawing F1. The samples were collected at locations where Montgomery Watson personnel and the IEPA representative agreed were the approximate location shown on Drawings 10024910-F17 of the Work Plan. Sediment samples were collected following the groundwater investigation and prior to Round 3 groundwater quality sampling.

A round of water levels was intended to be collected immediately prior to the sediment sampling. This would have provided information for adjustment of sediment samples SD03 and SD07 had there been VOC detections (and contingency borings conducted) at the hydraulic probe boring locations. However, no VOCs were detected, therefore, the water levels were not conducted until after the sediment sampling had been initiated.

The planning documents stipulated sample SD02 be collected approximately 100 ft downstream from the point of discharge of the former R&D Facility wastewater lagoons. However, the former lagoons were seepage lagoons, therefore, the sample was collected, with concurrence of the IEPA representative, directly downstream from the approximate area where seepage water from the lagoons may have discharged to the river.

Access to the sediment sampling locations was obtained using a canoe, and by direct access. Samples were collected using a stainless steel hand auger. Care was taken to avoid disturbing and losing the fraction of fine particulate matter. At locations where the sample was collected by direct access (backwater areas) there was ice on the river which allowed direct access without disturbing the sediment. Where sufficient sample volume was not obtained with initial sediment collection, additional sample was collected and the entire sample was composited in a stainless steel bowl prior to placement in sample containers.

The sediment samples were analyzed in accordance with the Work Plan Addendum (p. 2-6) and Table 1-1 of the QAPP Addendum (Section 4). Sediment sampling was conducted using the U.S. EPA CLP requirements for field and laboratory quality control and documentation. Data was generated under Level IV DQO (Level III for grain size distribution, Total Organic Carbon (TOC), and pH) with data validation. Samples collected during the sediment investigation were shipped, on ice, directly to IEA Laboratories (organics), Montgomery Watson Analytical Testing Services (inorganics), RMT Laboratories (TOC), and CGC, Inc. (grain size distribution). Samples were shipped using strict CLP chain-of-custody procedures.

The planning documents specified Montgomery Watson geotechnical testing laboratories for grain size analysis. However, the laboratory was permanently closed prior to the investigation and CGC Inc. located in Madison, Wisconsin, was used to complete the required analysis.

Grain size distribution results are included in Appendix D and summarized on Table 2. TOC and pH results are contained in Appendix H and summarized on Table 5. Analytical laboratory reports are contained in Appendix H and detections are summarized on Table 6.

SURFACE WATER

One surface water sample (SW01) was collected to complete the EA and BRA. The surface water sample was collected on November 15, 1995, from a location in the near side backwater area of the Rock River at the approximate location shown on Drawing F1. The sample was collected at the same location as sediment sample SD06.

The surface water sample was collected by directly immersing the sample bottles along the eastern bank of the Rock River backwater area. Due to the time of year the sample was collected, thin ice had to be broken to allow sample collection.

The surface water sample was analyzed in accordance with Table 1-1 of the QAPP Addendum (Section 4). Surface water sampling was conducted using the U.S. EPA CLP requirements for field and laboratory quality control and documentation. Data was generated under Level IV DQO (Level III for indicator parameters) with data validation. The sample collected during the surface water investigation was shipped, on ice, directly to IEA Laboratories. The sample was shipped using strict CLP chain-of-custody procedures.

There were no compounds detected in the surface water sample. Analytical laboratory reports are included in Appendix H.

WATER LEVEL MEASUREMENTS

One complete round of water level measurement was collected (November 15, 1995) during Phase 3 of the RI. The water level measurements were conducted during the sediment sampling task and approximately one week prior to Round 3 groundwater sampling. Water levels were obtained by the use of an electronic water level indicator. Depth to water was measured from the top of casing and adjusted to MSL. Staff gauge readings are visually read directly from the gauge and corrected to the surveyed elevation. The water level indicator was rinsed with deionized water prior to each measurement. Water level measurements are summarized on Table 4. Vertical gradients were calculated using the November 15, 1995 groundwater measurements and are summarized on Table 7. A water table map was produced using the November 15, 1995 water level measurements and is included as Drawing F2.

ROUND 3 GROUNDWATER SAMPLING

Round 3 groundwater sampling was conducted on November 20 and 21, 1995. Groundwater sampling generally proceeded from wells expected to have the lowest VOC concentrations (based upon observations during drilling and existing groundwater quality data), to the wells suspected of having the highest VOC concentrations. Each sampled well was purged immediately prior to sampling using a submersible sampling pump or bailer.

Sampling was performed with either a stainless steel bailer (wells screened across the water table) or a Keck pump (for piezometers). The Keck pump was used to purge and sample piezometers. The Keck pump, equipped with an inflatable packer, was used in piezometers to purge and sample from within the stainless steel screen and riser.

The volume of water removed from the wells was measured so that a minimum of three well casing volumes were removed. Where a packer was used, three volumes of the water column below the packer was removed. Specific conductance, temperature, and pH were monitored for stabilization during purging. Samples taken from water table wells by using a stainless steel bailer, were poured into sample bottles in a manner to create as little agitation as possible.

Groundwater samples were analyzed in accordance with Table 1-1 of the QAPP Addendum (Section 4). Groundwater sampling was conducted using the U.S. EPA CLP requirements for field and laboratory quality control and documentation. Data was generated under Level IV DQO (Level III for indicator parameters) with data validation. The samples were shipped, on ice, directly to IEA Laboratories. The samples were shipped using strict CLP chain-of-custody procedures.

The sampling equipment and water level indicator were decontaminated between wells with an Alconox detergent solution and rinsed with deionized water. Decontamination of the pump and tubing consisted of pumping the decontamination solution into the wash tanks for several minutes. The pump was then moved into the rinse tank and pumping resumed with rinse water.

Groundwater sample blanks were collected by pumping deionized water through the sampling pump into the sample bottles. Matrix spike/matrix spike duplicate samples were collected using the same sampling device. Duplicate samples for volatile organics analysis were obtained by alternately filling VOC vials from the pump. The IEPA oversight contractor (E&E) collected split samples from several wells.

Wells were sampled in accordance with Table 2 of the Work Plan. Detections for Round 3 sampling are included in Appendix H and are summarized on Table 8. Detections from Rounds 1 and 2 sampling are included with Round 3 detections for comparison purposes.

HYDRAULIC CONDUCTIVITY TESTING

Hydraulic conductivities were measured by baildown testing in W29C and W42 on November 29, 1995. Table 2 summarizes the results, which are included in Appendix I. Hydraulic conductivity testing was conducted following Round 3 groundwater sampling. The Bouwer and Rice Method (1976) was used to analyze the test data.

The following method is for water table wells known from development information to have low hydraulic conductivities:

- Record water level and total depth as stated above.
- Insert 6-ft PVC bailer, allow to fill with groundwater and immediately withdraw to lower water level in well several feet (may be more than one bailer).
- Start the data logger immediately following removal of the final bailer of the water.
- Data are downloaded from the data logger to a computer for analysis.

The following is for piezometers using the air pressure method:

- Install the manifold with a pressure transducer and water level probe below the water level.
- After a stabilized water level reading is obtained from the pressure transducer, the well is pressurized with sufficient air pressure to displace several feet of water (0.4 PSI/ft of water).
- Air pressure is maintained until the water level reading from the transducer is stabilized.
- The air pressure is then instantaneously released while simultaneously starting the pressure transducer recorder.
- Data are downloaded from the data logger to a computer for analysis.

EQUIPMENT DECONTAMINATION PROCEDURES

A temporary decontamination facility was constructed on Beloit Corporation property for high pressure hot water washing off drilling equipment. The facility was constructed with several layers of heavy duty plastic (12 mil). The plastic was laid over 6-in. x 6-in. wood timbers used to create berms to contain decontaminated water. Plywood was laid down for the drill rigs to drive on so the plastic would not be punctured. The decontamination facility sloped in a single direction which allowed construction of a sump so water could be pumped into a 1,500-gal tank, that was kept at the site, when needed. The drilling equipment was high pressure washed at the temporary decontamination facility prior to moving to each new boring location, and prior to exiting the site.

Decontamination included hot water high pressure washing the drill rig, drilling equipment, and tools between boreholes.

Bailers, cables, and other miscellaneous tools were bucket washed in an Alconox solution and triple rinsed with potable water. Pumping systems used were decontaminated by running the Alconox solution through the pump and associated hosing for a minimum of three minutes followed by rinsing with potable water using the same procedure.

DATA REPORTING

All chemical analytical results were validated by Montgomery Watson as specified in the QAPP. A summary of validation and data quality is included in Appendix H. Data are presented in Appendix H. Positive results (detects) are summarized on Table 1 (field GC screening), Table 6 (sediment sample detections), and Table 8 (Round 3 groundwater sampling detections). Detections from Round 1 and Round 2 have been included on Table 8 with detections from Round 3 for ease of comparison. Refer to Technical Memorandums I and II for complete volatile analytical results.

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B

SOIL BORING LOGS

B1 Important Information About Your
Geotechnical Engineering Report
General Notes
Unified Soil Classification System (USCS)

B2 Boring Logs

MONTGOMERY WATSON

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LOG OF TEST BORING
General Notes

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)
FINE GRAINED SOILS	0 - 2	VERY SOFT	0 - 0.25
	3 - 4	SOFT	0.25 - 0.50
	5 - 8	MEDIUM STIFF	0.50 - 1.00
	9 - 16	STIFF	1.00 - 2.00
	17 - 32	VERY STIFF	2.00 - 4.00
	>32	HARD	>4.00

	N VALUE * (BLOWS/FT)	RELATIVE DENSITY
COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	5 - 10	LOOSE
	11 - 30	MEDIUM DENSE
	31 - 50	DENSE
	>50	VERY DENSE

* ASTM D 1586: NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1 1/2 IN. I.D. SAMPLER ONE FOOT.

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	3/4" to 3"	3/4" to 3"
Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

RELATIVE PROPORATIONS OF COHESIONLESS SOILS

Proportional Term	Defining Range By Percentage of Weight
Trace	0% - 5%
Little	5% - 12%
Some	12% - 35%
And	35% - 50%

GENERAL TERMINOLOGY

Physical Characteristics - Color, moisture, grain shape, fineness, etc.
Major Constituents - Clay, silt, sand, gravel
Structure - Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin - Glacial, alluvial, eolian, residual, etc.

DESCRIPTION OF BORING LOG HEADINGS

No. = Sample number within the boring.
Rec. = Amount of sample recovery.
Moist = Visual estimate of the amount of moisture in the sample.
Type = Sampler type and sample interval.
N Value = The penetration resistance, N, is the sum of blows required to effect two successive 6" penetrations of the 2" split-spoon sampler per ASTM D1586.
Depth = Depth below ground surface.
Visual Classification = Lithologic symbol of soil or rock type; Description of stratigraphy; Borehole material graphics.
q_a = Penetrometer Reading, tons/sq. ft.
PID = Photoionization detector reading. Values are recorded as benzene equivalent units in ppm above background (0 = background reading).

Other environmental analyses may be reported. Results are provided as a value where quantifiable or as zero or ND when below detection limit.

SYMBOLS

SAMPLE TYPE

Unsampled interval
2" outside diameter split spoon sampler
3" outside diameter split spoon sampler
3" Shelby tube
5' continuous sampler
Drilled by hollow stem augers; not sampled; logged by cuttings
Hand sample from surface
4" outside diameter core barrel sampler
Drilled by rotary wash bore; not sampled; logged by cuttings

WELL GRAPHICS

Concrete surface seal around well casing
Bentonite slurry or cement-bentonite grout around well casing
Bentonite pellet seal around well casing
Fine filter sand backfill around well casing
Sand backfill around well casing
Sand filter pack around well screen
Sand backfill or natural soil collapse in borehole
Bentonite seal in borehole
Gravel backfill around well casing
Gravel backfill around vertical slot gas well
Gravel backfill around a leachate well
Gravel backfill around a perforated gas well
Gravel base material

LABORATORY TESTS

W - Moisture Content, %
LL - Liquid Limit, %
PL - Plastic Limit, %
LI - Loss on Ignition, %
D - Dry Unit Weight, lbs./cu. ft.
pH - Measure of Soil Alkalinity or Acidity

DRILLING AND SAMPLING

RC - Rock Coring (Size)
RQD - Rock Quality Designator
RB - Rotary Boring
DM - Drilling Mud
CW - Clear Water
AR - Air Rotary
DC - Drove Casing (Size)
HSA - Hollow Stem Auger
FA - Flight Auger
HA - Hand Auger

WATER LEVEL MEASUREMENT

▽ - Water level at time shown
NW - No Water Encountered
WD - While Drilling
BCR - Before Casing Removal
ACR - After Casing Removal
AD - After Drilling

NOTE: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels.

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UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (More than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	Gravels with Fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with Fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

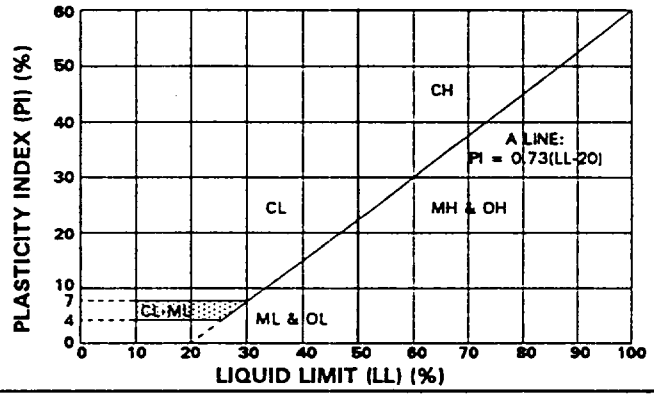
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} X D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} X D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent	GW, GP, SW, SP
More than 12 percent	GM, GC, SM, SC
5 to 12 percent	Borderline cases requiring dual symbols

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Topsoil	GS	SM/GM	CL-ML	Crystalline Rock	Dolomite
Pavement					
Fill	GC-GM	SC/GC	Claystone	Sandstone	Siltstone
Refuse	GS2	SC-SM	Coal	Limestone	Shale

See log description for USCS classification of the following soils:
SM/GM & SC/GC - Symbols are used to differentiate SM, GM, SC & GC soils.

GS2 - Symbol used when approximately equal percentages of gravel, sand, silt & clay exist.
GS - Symbol used for GP, GW, SP or SW soils with nearly equal sand and gravel.

B1

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

General Notes
Unified Soil Classification System (USCS)

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

As the client of a consulting geotechnical engineer, you should know that site subsurface conditions cause more construction problems than any other factor. ASFE/The Association of Engineering Firms Practicing in the Geosciences offers the following suggestions and observations to help you manage your risks.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Your geotechnical engineering report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. These factors typically include: the general nature of the structure involved, its size, and configuration; the location of the structure on the site; other improvements, such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask your geotechnical engineer to evaluate how factors that change subsequent to the date of the report may affect the report's recommendations.

Unless your geotechnical engineer indicates otherwise, do not use your geotechnical engineering report:

- when the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size, elevation, or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership; or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems that may occur if they are not consulted after factors considered in their report's development have changed.

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time of subsurface exploration. Do not base construction decisions on a geotechnical engineering report whose adequacy may have been affected by time. Speak with your geotechnical consultant to learn if additional tests are advisable before construction starts.Note, too, that additional tests may be required when subsurface conditions are affected by construction operations at or adjacent to the site, or by natural events such as floods, earthquakes, or ground water fluctuations. Keep your geotechnical consultant apprised of any such events.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL JUDGMENTS

Site exploration identifies actual subsurface conditions only at those points where samples are taken. The data were extrapolated by your geotechnical engineer who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your geotechnical engineer can work together to help minimize their impact. Retaining your geotechnical engineer to observe construction can be particularly beneficial in this respect.

A REPORT'S RECOMMENDATIONS CAN ONLY BE PRELIMINARY

The construction recommendations included in your geotechnical engineer's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize recommendations. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your geotechnical engineer prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the geotechnical engineer. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.

GEOENVIRONMENTAL CONCERNS ARE NOT AT ISSUE

Your geotechnical engineering report is not likely to relate any findings, conclusions, or recommendations

about the potential for hazardous materials existing at the site. The equipment, techniques, and personnel used to perform a geoenvironmental exploration differ substantially from those applied in geotechnical engineering. Contamination can create major risks. If you have no information about the potential for your site being contaminated, you are advised to speak with your geotechnical consultant for information relating to geoenvironmental issues.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid misinterpretations, retain your geotechnical engineer to work with other project design professionals who are affected by the geotechnical report. Have your geotechnical engineer explain report implications to design professionals affected by them, and then review those design professionals' plans and specifications to see how they have incorporated geotechnical factors. Although certain other design professionals may be familiar with geotechnical concerns, none knows as much about them as a competent geotechnical engineer.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE REPORT

Geotechnical engineers develop final boring logs based upon their interpretation of the field logs (assembled by site personnel) and laboratory evaluation of field samples. Geotechnical engineers customarily include only final boring logs in their reports. Final boring logs should not under any circumstances be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes, and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, give contractors ready access to the complete geotechnical engineering report prepared or authorized for their use. (If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared and that developing construction cost estimates was not one of the specific purposes for which it was prepared. In other words, while a contractor may gain important knowledge from a report prepared for another party, the contractor would be well-advised to discuss the report with your geotechnical engineer and to perform the additional or alternative work that the contractor believes may be needed to obtain the data specifically appropriate for construction cost estimating purposes.) Some clients believe that it is unwise or unnecessary to give contractors access to their geotechnical engineering reports because they hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems. It also helps reduce the adversarial attitudes that can aggravate problems to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical engineers. To help prevent this problem, geotechnical engineers have developed a number of clauses for use in their contracts, reports, and other documents. Responsibility clauses are not exculpatory clauses designed to transfer geotechnical engineers' liabilities to other parties. Instead, they are definitive clauses that identify where geotechnical engineers' responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report. Read them closely. Your geotechnical engineer will be pleased to give full and frank answers to any questions.

RELY ON THE GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Most ASFE-member consulting geotechnical engineering firms are familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a construction project, from design through construction. Speak with your geotechnical engineer not only about geotechnical issues, but others as well, to learn about approaches that may be of genuine benefit. You may also wish to obtain certain ASFE publications. Contact a member of ASFE of ASFE for a complimentary directory of ASFE publications.

ASFE THE ASSOCIATION OF ENGINEERING FIRMS PRACTICING IN THE GEOSCIENCES
8811 COLESVILLE ROAD/SUITE G106/SILVER SPRING, MD 20910
TELEPHONE: 301/565-2733 FACSIMILE: 301/589-2017

BPC0592A/3.5M

MONTGOMERY WATSON

One Science Court
P.O. Box 5385
Madison, WI 53705
TEL. (608) 231-4747

LOG OF TEST BORING
General Notes

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)
FINE GRAINED SOILS	0 - 2	VERY SOFT	0 - 0.25
	3 - 4	SOFT	0.25 - 0.50
	5 - 8	MEDIUM STIFF	0.50 - 1.00
	9 - 16	STIFF	1.00 - 2.00
	17 - 32	VERY STIFF	2.00 - 4.00
	>32	HARD	>4.00

	N VALUE * (BLOWS/FT)	RELATIVE DENSITY
COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	5 - 10	LOOSE
	11 - 30	MEDIUM DENSE
	31 - 50	DENSE
	>50	VERY DENSE

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1 1/2 IN. I.D. SAMPLER ONE FOOT.

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	3/4" to 3"	3/4" to 3"
Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

RELATIVE PROPORATIONS OF COHESIONLESS SOILS

Proportional Term	Defining Range By Percentage of Weight
Trace	0% - 5%
Little	5% - 12%
Some	12% - 35%
And	35% - 50%

GENERAL TERMINOLOGY

Physical Characteristics - Color, moisture, grain shape, fineness, etc.
Major Constituents - Clay, silt, sand, gravel
Structure - Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin - Glacial, alluvial, eolian, residual, etc.

DESCRIPTION OF BORING LOG HEADINGS

No. = Sample number within the boring.
Rec. = Amount of sample recovery.
Moist = Visual estimate of the amount of moisture in the sample.
Type = Sampler type and sample interval.
N Value = The penetration resistance, N, is the sum of blows *required to effect two successive 6" penetrations of* the 2" split-spoon sampler per ASTM D1586.
Depth = Depth below ground surface.
Visual Classification = Lithologic symbol of soil or rock type; Description *of stratigraphy; Borehole material graphics.*
q_a = Penetrometer Reading, tons/sq. ft.
PID = Photoionization detector reading. Values are recorded as benzene equivalent units in ppm above background (0 = background reading).

Other environmental analyses may be reported. Results are provided as a value where quantifiable or as zero or ND when below detection limit.

SYMBOLS

SAMPLE TYPE

Unsampled interval
2" outside diameter split *spoon sampler*
3" outside diameter split spoon sampler
3" Shelby tube
5' continuous sampler
Drilled by hollow stem augers; not sampled; logged by cuttings
Hand sample from surface
4" outside diameter core barrel sampler
Drilled by rotary wash bore; not sampled; logged by cuttings

WELL GRAPHICS

Concrete surface seal around well casing
Bentonite slurry or cement-bentonite grout around well casing
Bentonite pellet seal around well casing
Fine filter sand backfill around well casing
Sand backfill around well casing
Sand filter pack around well screen
Sand backfill or natural *soil collapse in borehole*
Bentonite seal in borehole
Gravel backfill around well casing
Gravel backfill around vertical slot gas well
Gravel backfill around a leachate well
Gravel backfill around a perforated gas well
Gravel base material

LABORATORY TESTS

W - Moisture Content, %
LL - Liquid Limit, %
PL - Plastic Limit, %
LI - Loss on Ignition, %
D - Dry Unit Weight, lbs./cu. ft.
pH - Measure of Soil Alkalinity or Acidity

DRILLING AND SAMPLING

RC - Rock Coring (Size)
RQD - Rock Quality Designator
RB - Rotary Boring
DM - Drilling Mud
CW - Clear Water
AR - Air Rotary
DC - Drove Casing (Size)
HSA - Hollow Stem Auger
FA - Flight Auger
HA - Hand Auger

WATER LEVEL MEASUREMENT

▽ - Water level at time shown
NW - No Water Encountered
WD - While Drilling
BCR - Before Casing Removal
ACR - After Casing Removal
AD - After Drilling

NOTE: Water level measurements shown on the boring logs represent *conditions at the time indicated and* may not reflect static levels.

MONTGOMERY WATSON

One Science Court
P.O. Box 5385
Madison, WI 53705
TEL. (608) 231-4747

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (More than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	Gravels with Fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with Fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

GC Atterberg limits above "A" line with P.I. greater than 7

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

SP Not meeting all gradation requirements for SW

SM Atterberg limits below "A" line or P.I. less than 4

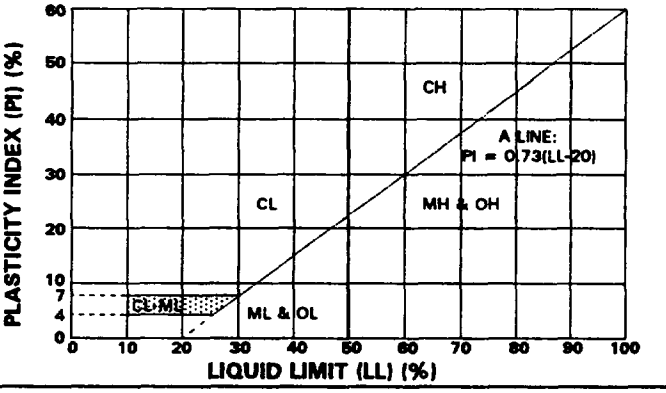
SC Atterberg limits above "A" line with P.I. greater than 7

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent	GW, GP, SW, SP
More than 12 percent	GM, GC, SM, SC
5 to 12 percent	Borderline cases requiring dual symbols

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Topsoil	GS	SM/GM	CL-ML	Crystalline Rock	Dolomite
Pavement	GC-GM	SC/GC	Claystone	Sandstone	Siltstone
Fill	GS2	SC-SM	Coal	Limestone	Shale
Refuse					

See log description for USCS classification of the following soils:
SM/GM & SC/GC - Symbols are used to differentiate SM, GM, SC & GC soils.

GS2 - Symbol used when approximately equal percentages of gravel, sand, silt & clay exist.
GS - Symbol used for GP, GW, SP or SW soils with nearly equal sand and gravel.

B2

BORING LOGS

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W29C Monitor Well No. W29C

Site File Name Beloit Corporation RI/FS Surface Elev. 748.4 Completion Depth 69.5

Fed. ID. No. Auger Depth NA Rotary Depth 70.0

Quadrangle South Beloit Sec. 13 T. 46N R. 1E Date: Start 11/1/95 Finish 11/2/95

State Plane N. 2113240.7 E. 797023.7

Boring Location North Side of East End of Dingmon Dr.

Drilling Equipment TH60 Dual Tube

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
747.4	Soft, Dark Brown, Sandy SILT, Little to Some Organics, Trace Gravel (TOPSOIL)			1							
746.4	Dense, Tan, SAND and GRAVEL, Trace Silt, Numerous Scattered Cobbles (SP/GP)			2							
745.4				3							
744.4				4							
743.4				5							
742.4				6							
741.4				7							
740.4				8							
739.4				9							
738.4				10							
737.4				11							
736.4				12							
735.4				13							
734.4				14							
733.4				15							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W29C Monitor Well No. W29C

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
732.4	Dense, Tan, Fine to Medium SAND, Trace Silt (SP)			16							
731.4				17							
730.4				18							
729.4				19							
728.4				20							
727.4				21							
726.4				22							
725.4				23							
724.4				24							
723.4				25							
722.4	Dense, Brown, Silty SAND, Trace to Little Gravel, Trace Clay (SM)			26							
721.4				27							
720.4				28							
719.4				29							Collect groundwater sample for field GC screen at 29 ft.
718.4				30							
717.4				31							
716.4				32							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W29C Monitor Well No. W29C

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
715.4				33							
714.4				34							
713.4				35							
712.4				36							
711.4				37							
710.4				38							
709.4				39							Collect groundwater sample for feld GC screen at 39 ft.
708.4				40							
707.4				41							
706.4				42							
705.4				43							
704.4				44							
703.4				45							
702.4				46							
701.4				47							
700.4				48							
699.4				49							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W29C Monitor Well No. W29C

Personnel: G - J. Ramsby; D - D. Jones; H - E. Teschendorf; H -

Elev.	DESCRIPTION	Depth in feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
698.4		50							Collect groundwater sample for field GC screen at 49 ft.
697.4		51							
696.4		52							
695.4		53							
694.4	Dense, Brown, Fine to Medium SAND, Trace Silt and Clay (SP)	54							
693.4		55							
692.4		56							
691.4		57							
690.4		58							
689.4		59							Collect groundwater sample for field GC screen at 59 ft.
688.4		60							
687.4		61							
686.4		62							
685.4		63							
684.4		64							
683.4		65							
682.4		66							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W29C Monitor Well No. W29C

Personnel: G - J. Ramsby; D - D. Jones; H - E. Teschendorf; H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
681.4				67							
680.4				68							
679.4				69							Collect groundwater sample for field GC screen, TOC and grain size samples at 69 ft.
678.4	Stiff, Gray, Lean CLAY, Trace Fine Sand (CL)			70							
	End of Boring at 70.0 ft										

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W42C Monitor Well No. W42

Site File Name Beloit Corporation RI/FS Surface Elev. 746.9 Completion Depth 24.5

Fed. ID. No. Auger Depth NA Rotary Depth 64.0

Quadrangle South Beloit Sec. 13 T. 46N R. 1E Date: Start 11/6/95 Finish 11/7/95

State Plane N. 2115221.8 E. 796106.0

Boring Location West of Erection Bay

Drilling Equipment TH60 Dual Tube

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
	Stiff, Dark Brown, Sandy SILT, Trace Clay, Little to Some Organics (TOPSOIL)										
745.9	Dense, Tan, SAND and GRAVEL, Trace Silt, Numerous Scattered Cobbles (SP/GP)			1							
744.9				2							
743.9				3							
742.9				4							
741.9				5							
740.9				6							
739.9				7							
738.9				8							
737.9				9							
736.9				10							
735.9				11							
734.9				12							
733.9				13							
732.9				14							
731.9				15							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W42C Monitor Well No. W42

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
730.9				16							
729.9				17							
728.9				18							
727.9	Dense, Brown, Fine to Coarse SAND, Some Gravel and Silt, Little Clay (SM)			19							
726.9				20							
725.9				21							Collect groundwater sample for field GC screen at 21 ft.
724.9				22							
723.9				23							
722.9				24							
721.9				25							
720.9				26							
719.9				27							
718.9				28							
717.9				29							Collect groundwater sample for feld GC screen at 29 ft. Collect TOC and grain size samples at 30 ft.
716.9				30							
715.9				31							
714.9				32							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W42C Monitor Well No. W42

Personnel
G - J. Ramsby
D - D. Jones
H - E. Teschendorf
H -

Elev.	DESCRIPTION	Soil Graphic	Well Graphic	Depth in feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
713.9				33							
712.9				34							
711.9				35							
710.9				36							
709.9				37							
708.9				38							
707.9				39							Collect groundwater sample for field GC screen at 39 ft.
706.9				40							
705.9				41							
704.9				42							
703.9	Dense, Light Brown, Fine to Coarse SAND, Trace Silt and Gravel (SP)			43							
702.9				44							
701.9				45							
700.9				46							
699.9				47							
698.9				48							
697.9				49							

Illinois Environmental Protection Agency — Field Boring Log

Site File No. 2010350003 County Winnebago Boring No. W42C Monitor Well No. W42

Personnel: G - J. Ramsby; D - D. Jones; H - E. Teschendorf; H -

Elev.	DESCRIPTION	Depth in feet	Sample No.	Sample Type	Sample Recovery (%)	Pocket Penetrometer (tsf)	N Values (Blows)	OVA or PID readings (ppm)	REMARKS
696.9		50							Collect groundwater sample for field GC screen at 49 ft. Collect TOC and grain size samples at 50 ft (not analyzed).
695.9		51							
694.9		52							
693.9		53							
692.9	Dense, Light Brown, Fine SAND, Trace Silt (SP)	54							
691.9		55							
690.9		56							
689.9		57							
688.9		58							
687.9		59							Collect groundwater sample for field GC screen at 59 ft.
686.9		60							
685.9		61							
684.9		62							
683.9	Soft, Gray, Lean CLAY (CL)	63							Collect groundwater sample for field GC screen at 63 ft.
682.9	End of Boring at 64.0 ft	64							

C

BORING ABANDONMENT DOCUMENTATION

WATER WELL SEALING FORM

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
525 WEST JEFFERSON STREET
SPRINGFIELD, ILLINOIS 62761

W42C

RETURN ALL COPIES TO IDPH

TYPE OR PRESS FIRMLY

This form shall be submitted to this Department not more than 30 days after a potable water well, boring or monitoring well is sealed. Such wells are to be sealed not more than 30 days after they are abandoned in accordance with the sealing requirements in the Water Well Construction Code.

1. Ownership (Name of Controlling Party) Beloit Corporation

2. Well
   Location: 1165 Prairie Hill Rd. (Address - Lot Number) Rockton (City) Winnebago (County)
   General Description: Section 13 Township 46 (N)(S) Range 1 (E)(W)
   ____ Quarter of the NW Quarter of the NE Quarter ____

3. Year Drilled 1995

4. Drilling Permit No. (and date, if known) NA

5. Type of Well: Bored ____ Drilled X Other ____

6. Total Depth 64.0 ft Diameter (inches) 5.6

7. Formation clear of obstruction X yes ____ no

8. DETAILS OF PLUGGING

Filled with (cement or other materials)	Monitoring Well Installed	from	0.0	to	28.0 ft.
Kind of plug	Chipped Bentonite	from	28.0	to	40.0 ft.
Filled with	Natural Cave	from	40.0	to	64.0 ft.
Kind of plug		from		to	ft.
Filled with		from		to	ft.
Kind of plug		from		to	ft.

9. CASING RECORD
   Upper 3 feet of casing removed NA Yes ____ No

   If well casing consists of brick, stone, concrete blocks, porous tile, or other porous material, casing was removed to a depth of 3 feet below the surface NA Yes ____ No

10. Date well was sealed: Month 11 Day 7 Year 1995.

11. Licensed water well driller or other person approved by the Department performing well sealing:

Name	Complete License Number	
Doug Jones - Layne Northwest	NA	
Address	**City**	**State/Zip**
W229 N5005 DuPlainville Rd.	Pewaukee	Wisconsin 53072

This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

D

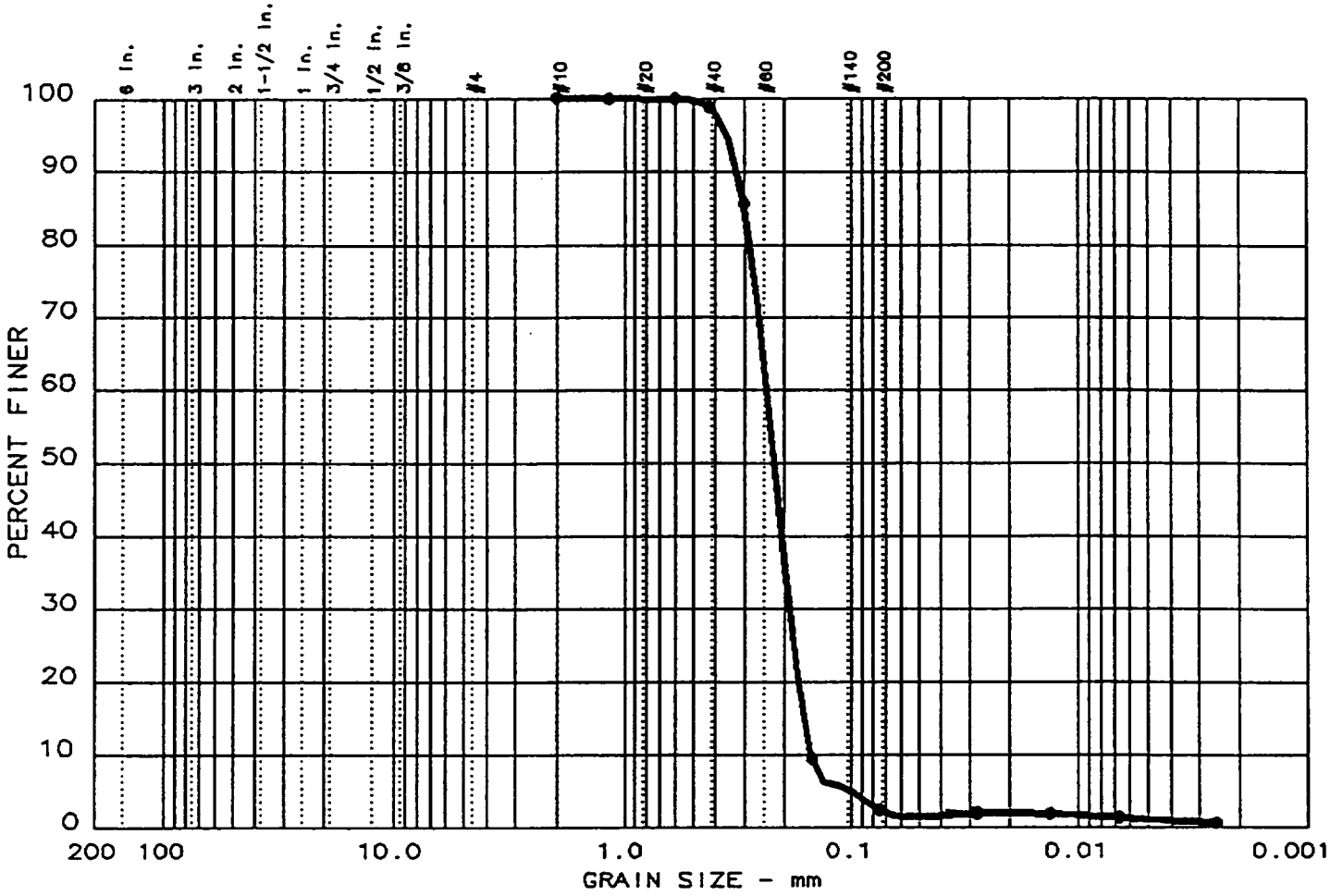
GEOTECHNICAL TESTING RESULTS

D1 Monitoring Wells
D2 Sediment Samples

D1

MONITORING WELLS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.0	97.6	1.3	1.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	0.30	0.24	0.22	0.189	0.1629	0.1514	0.99	1.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown F-M SAND, Trace Silt & Clay	SP	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample W29C @ 69.0 FT 11/07/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

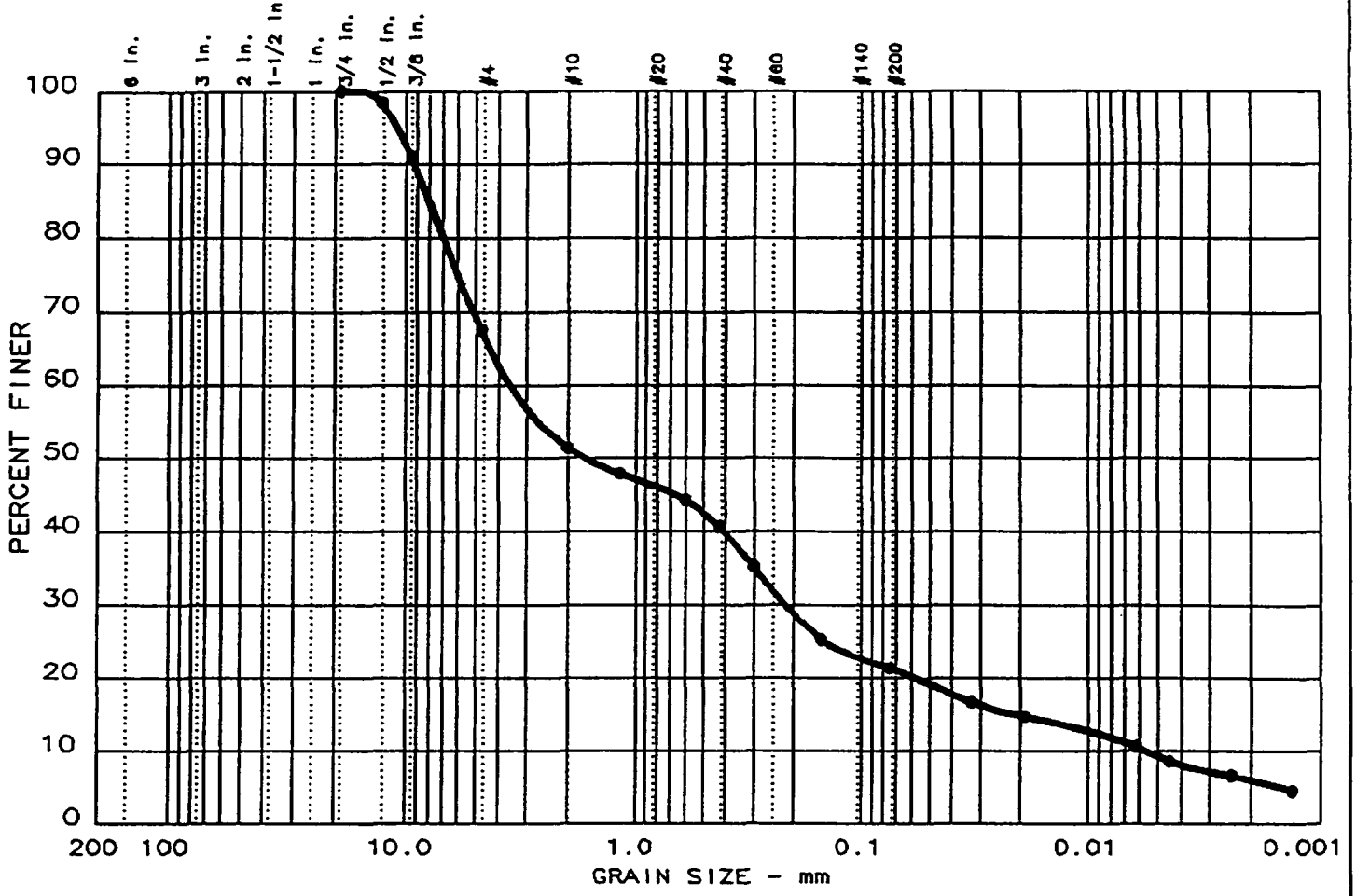
Checked By : KJL

Approved By :

Figure No. _____

000012

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	32.5	46.1	12.2	9.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	7.94	3.51	1.70	0.214	0.0207	0.0056	2.34	631.0

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown F-C SAND,Some Gravel & Silt, Little Clay	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample W42 @ 30.0 FT 11/07/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

Checked By : KJL

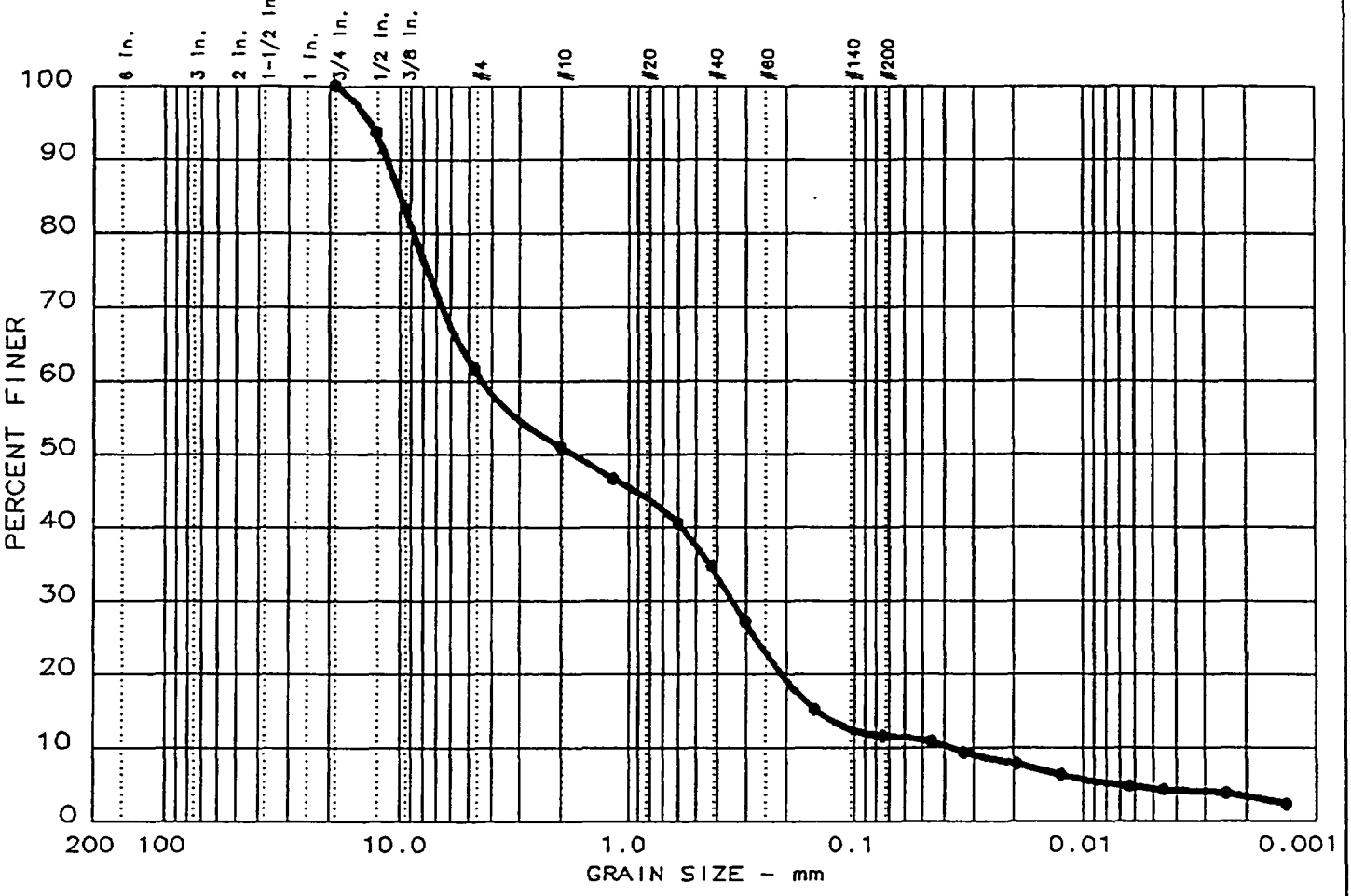
Approved By :

Figure No. _____

D2

SEDIMENT SAMPLES

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	38.4	49.9	7.2	4.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	9.94	4.39	1.77	0.341	0.1454	0.0361	0.73	121.6

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown F-C SAND & GRAVEL, Little Silt, Trace Clay	SP-SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 01 Sampled 11/14/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

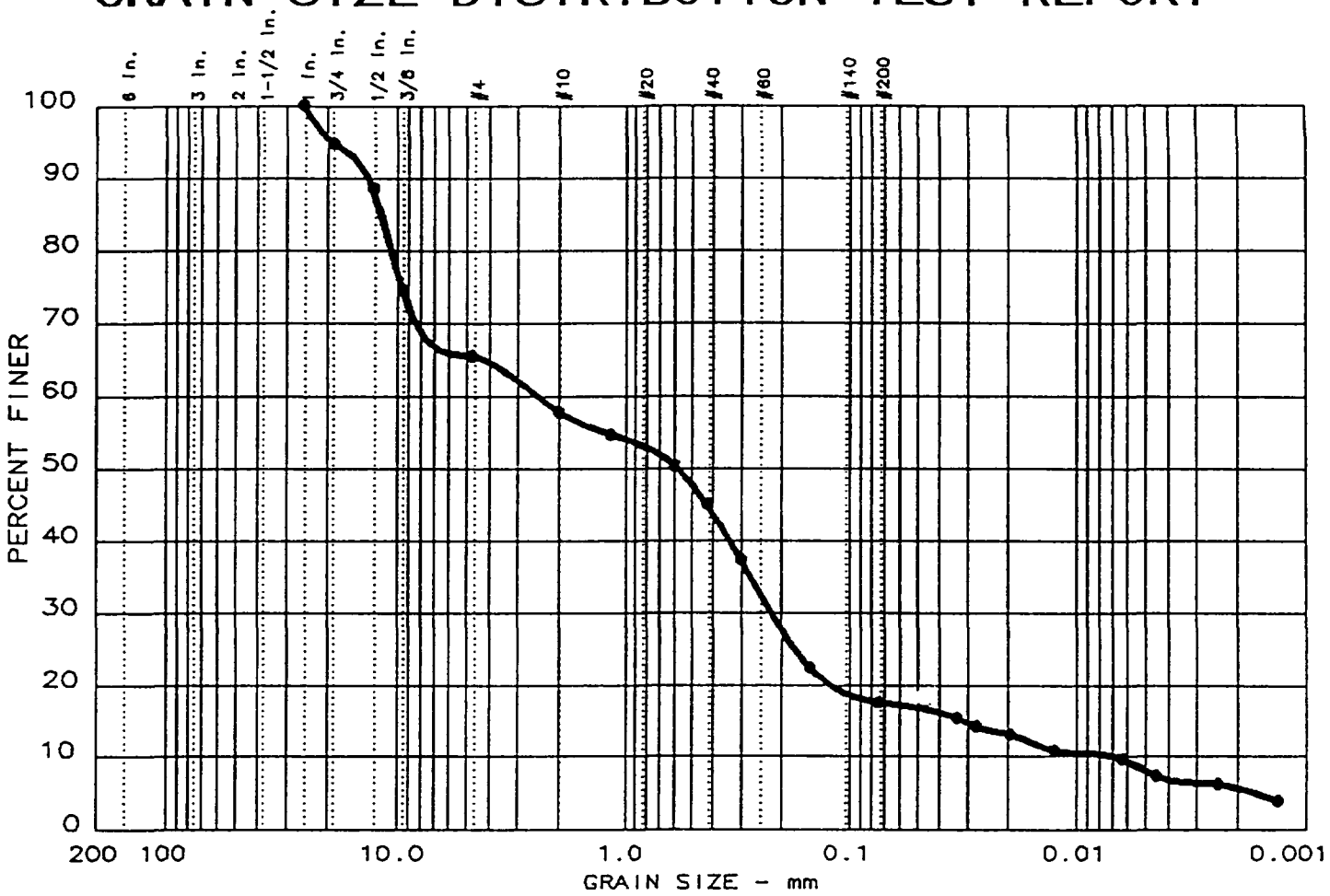
Checked By : KJL

Approved By :

Figure No. _____

000001

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	34.5	47.9	9.6	8.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	11.71	2.47	0.58	0.220	0.0315	0.0069	2.85	359.3

MATERIAL DESCRIPTION	USCS	AASHTO
● Gray F-C SAND, Some Gravel, Little Silt & Clay	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 02 Sampled 11/14/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

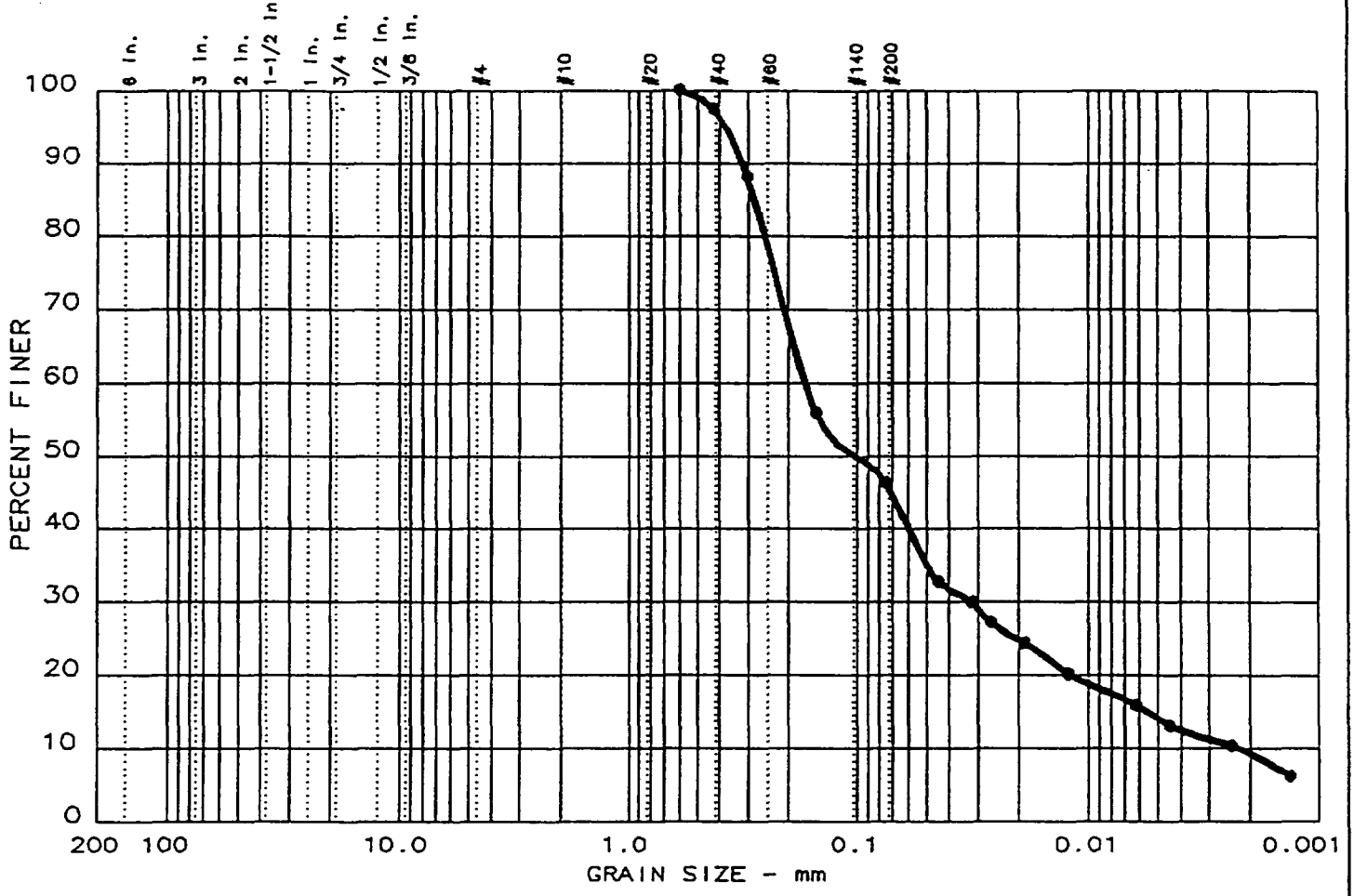
Checked By : KJL

Approved By :

Figure No. _____

000002

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	0.0	53.7	32.2	14.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	0.28	0.17	0.10	0.032	0.0055	0.0022	2.72	75.0

MATERIAL DESCRIPTION	USCS	AASHTO
● Black Fine SAND, Some Silt & Clay	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 03 Sampled 11/15/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

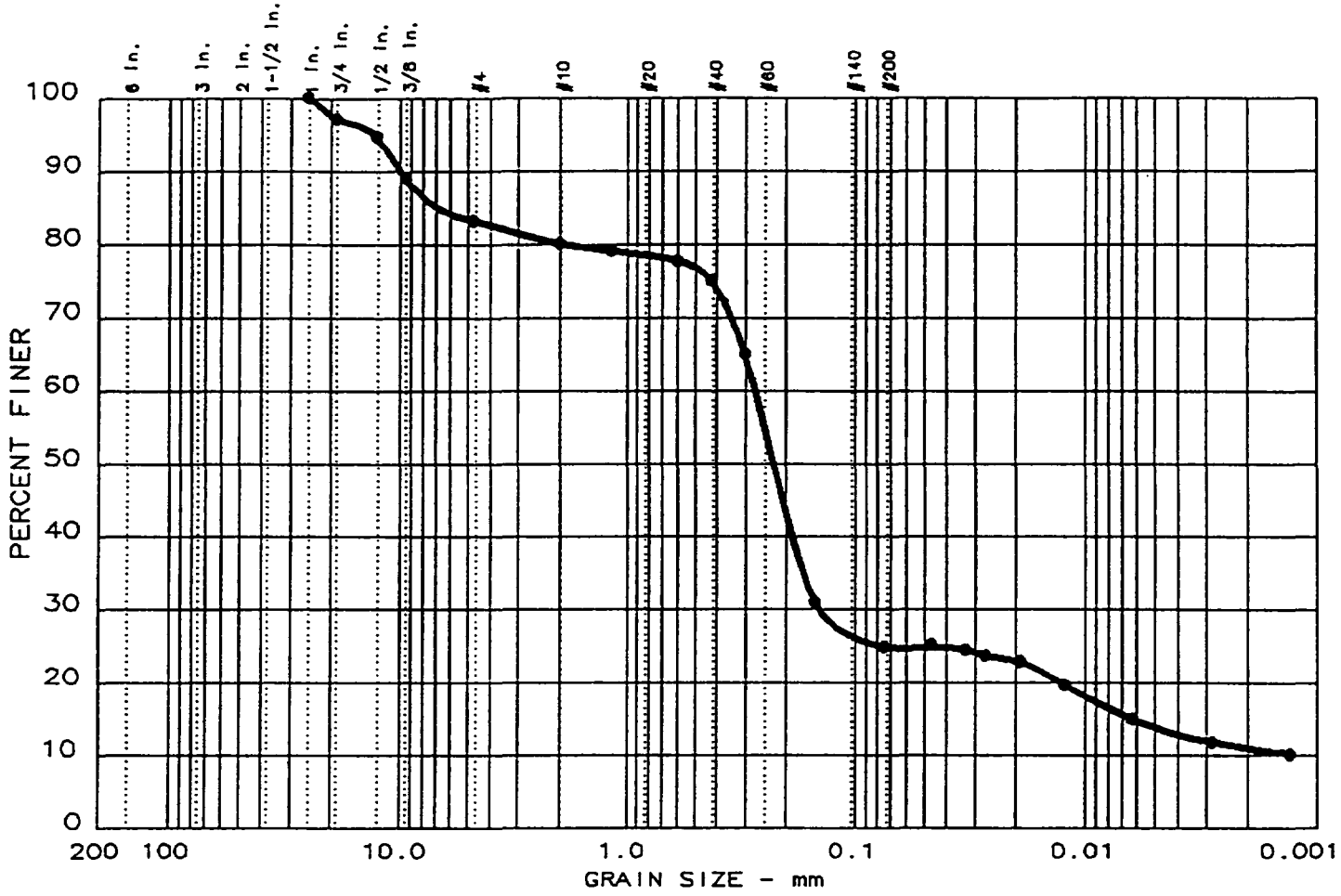
Checked By : KJL

Approved By : DWA

Figure No. _____

000003

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	16.8	58.3	11.1	13.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	6.84	0.27	0.23	0.144	0.0064			

MATERIAL DESCRIPTION	USCS	AASHTO
● Black F-C SAND, Some Silt & Clay & Gravel	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 04 Sampled 11/15/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

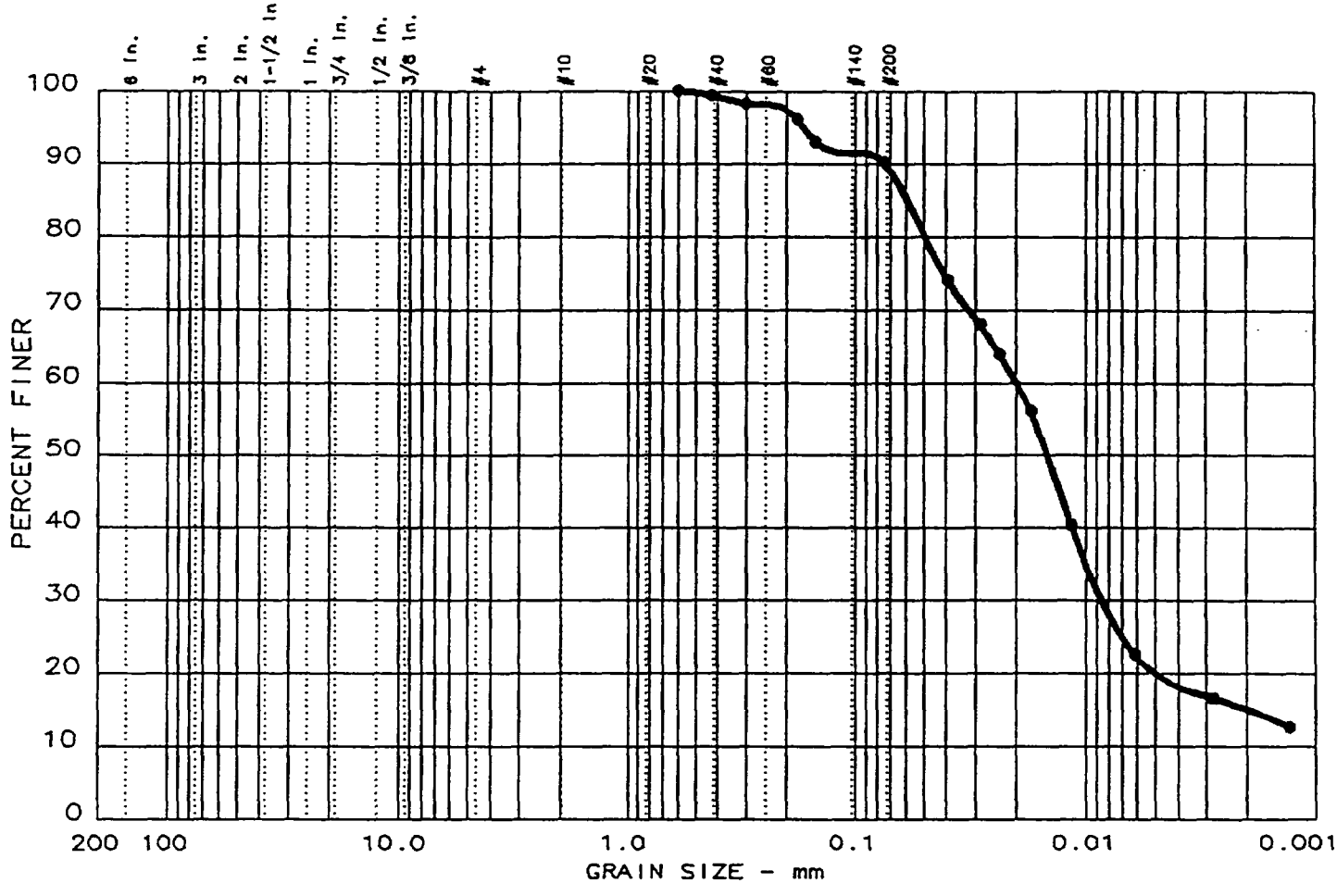
Checked By : KJL

Approved By : DWA

Figure No. _____

000004

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.0	9.8	70.3	19.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----			0.015	0.008	0.0019			

MATERIAL DESCRIPTION	USCS	AASHTO
● Black SILT, Some Clay, Little Fine Sand	ML	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 05 Sampled 11/15/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

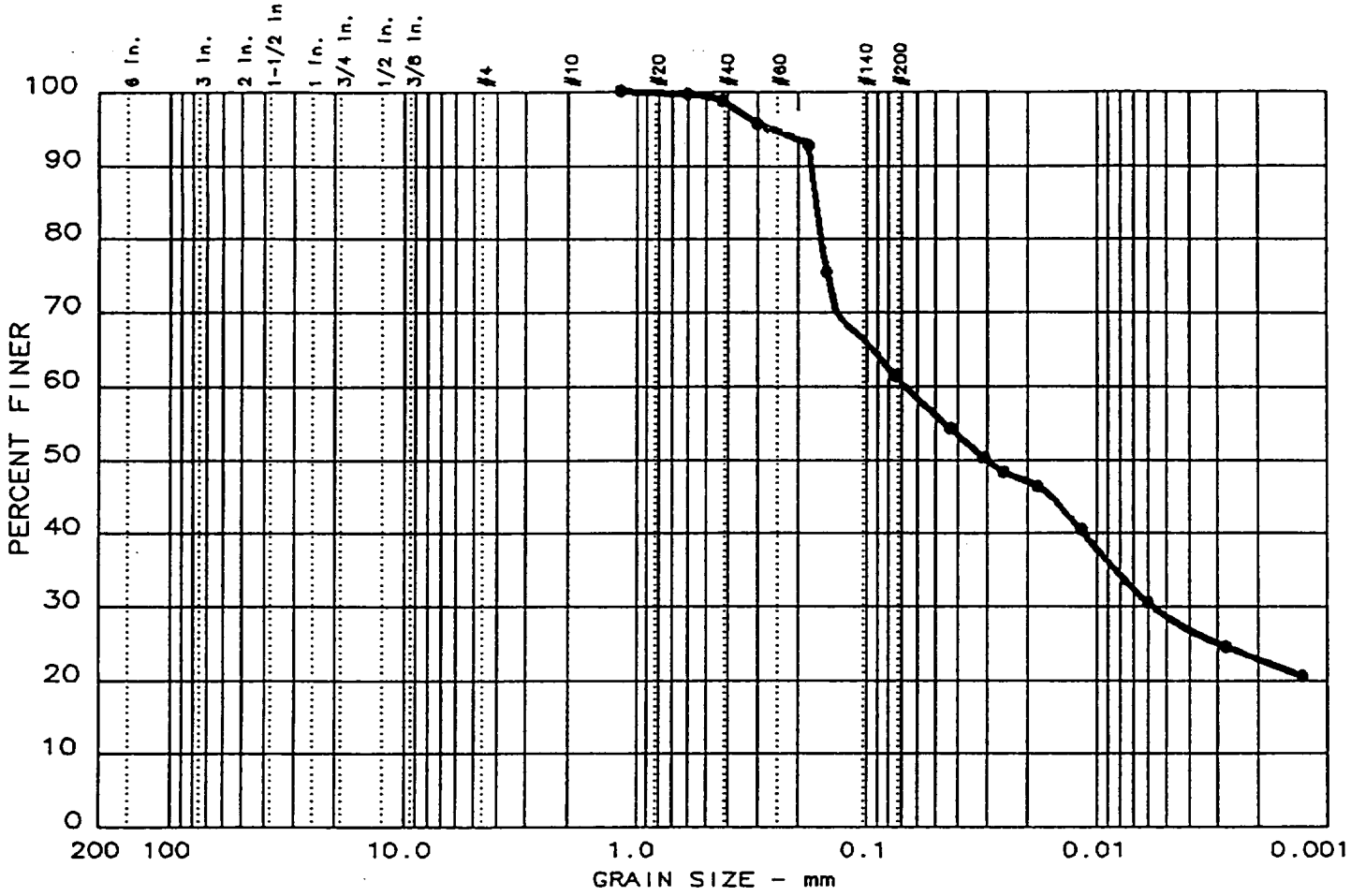
Input By : MES

Checked By : KJL

Approved By :

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	38.5	32.9	28.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	------	------	0.165		0.030	0.006				

MATERIAL DESCRIPTION	USCS	AASHTO
● Black Fine SAND, Some Silt & Clay	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 06 Sampled 11/15/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

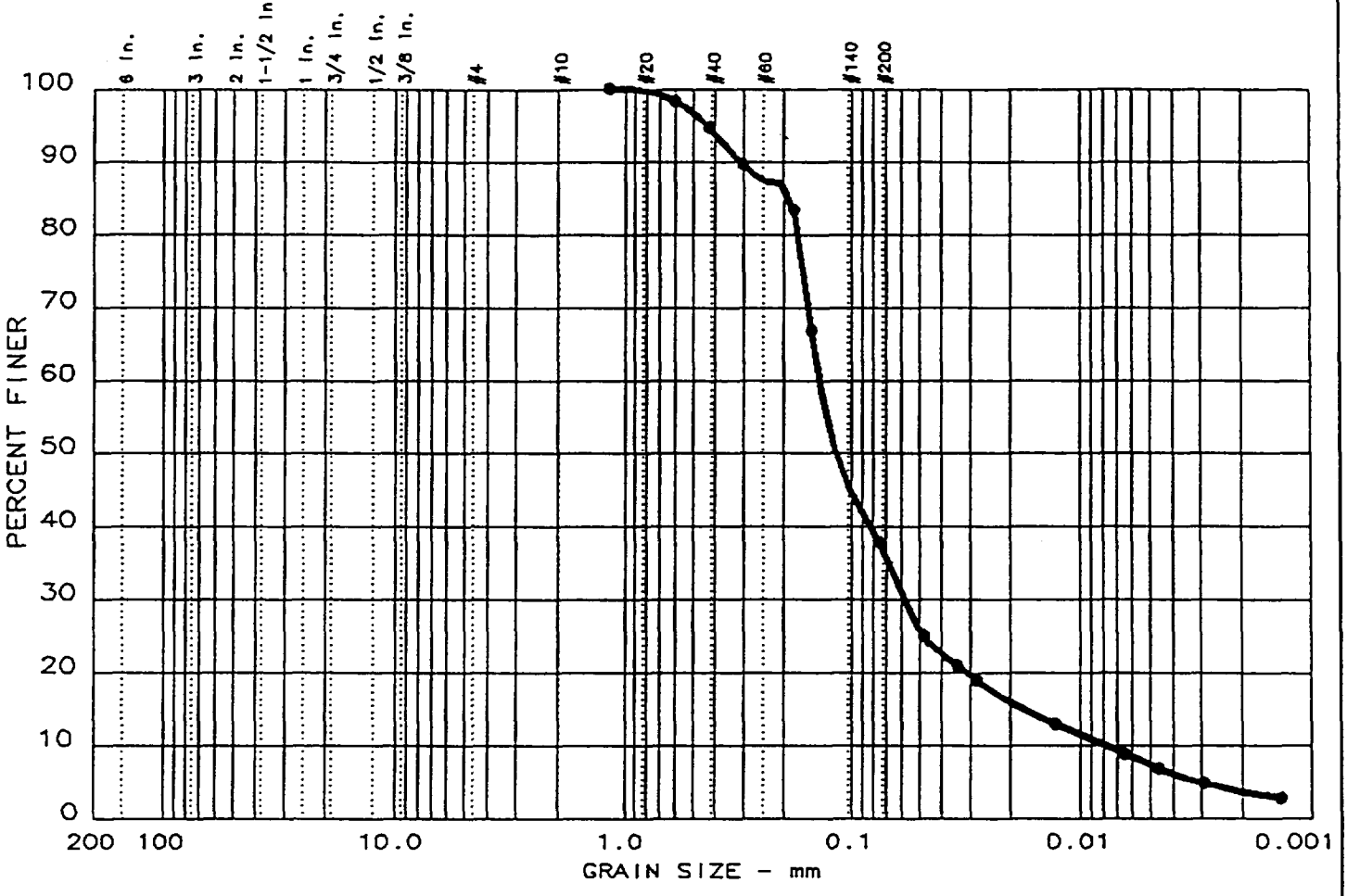
Checked By : KJL

Approved By : DWA

Figure No. _____

000006

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	62.2	30.5	7.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	0.19	0.14	0.12	0.058	0.0176	0.0078	3.09	17.8

MATERIAL DESCRIPTION	USCS	AASHTO
● Black Fine SAND, Some Silt, Little Clay	SM	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 07 Sampled 11/14/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

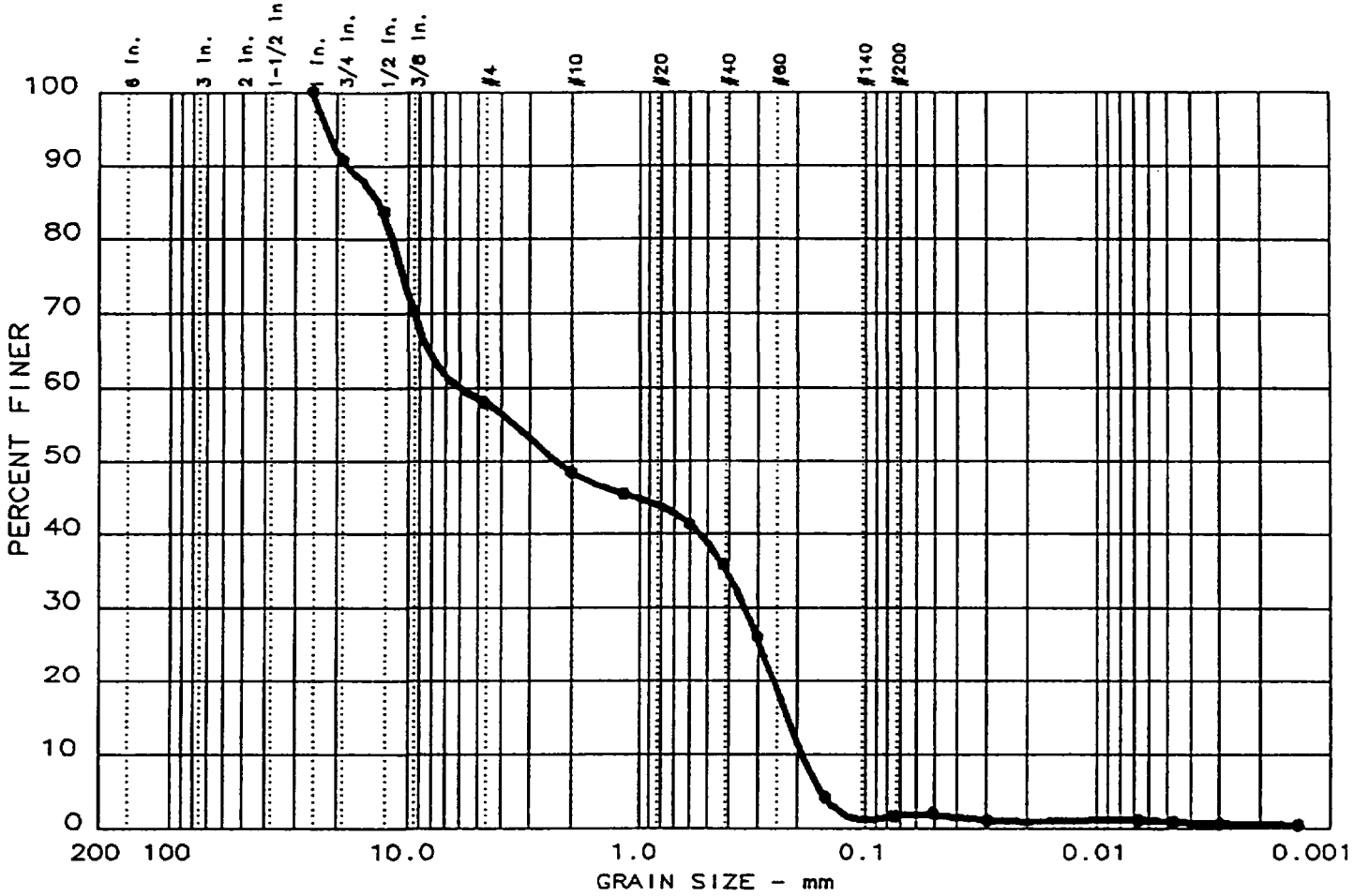
Checked By : KJL

Approved By :

Figure No. _____

000007

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	42.0	56.3	0.8	0.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	13.29	6.00	2.31	0.340	0.2193	0.1886	0.10	31.8

MATERIAL DESCRIPTION	USCS	AASHTO
● Black F-C SAND & GRAVEL, Trace Silt & Clay	SP	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 08 Sampled 11/14/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

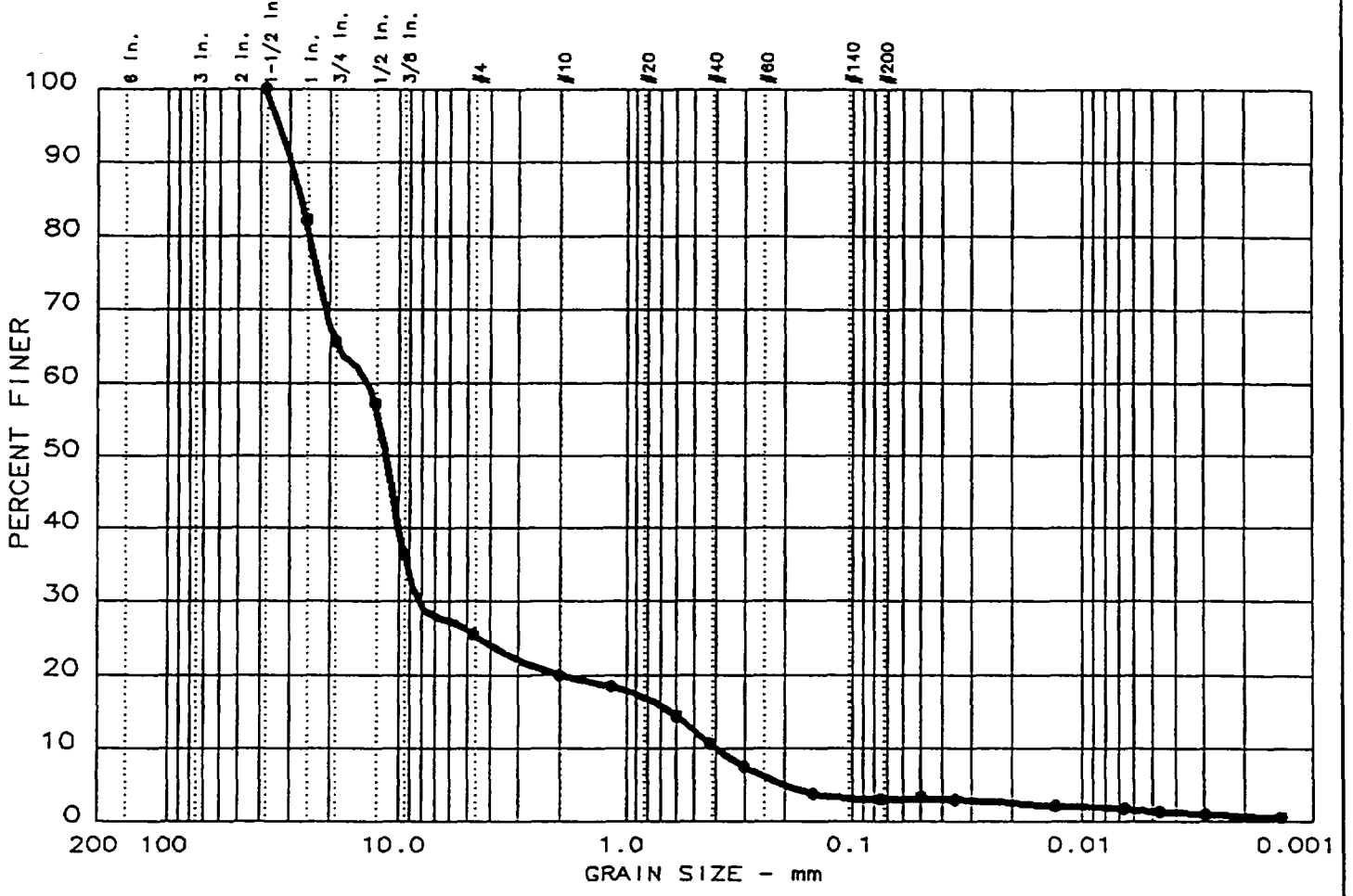
Checked By : KJL

Approved By : DWA

Figure No. _____

000008

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	74.5	22.5	1.6	1.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	26.70	13.54	11.39	8.156	0.6331	0.3995	12.30	33.9

MATERIAL DESCRIPTION	USCS	AASHTO
● Black GRAVEL, Some Sand, Trace Silt & Clay	GP	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD 09 Sampled 11/14/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

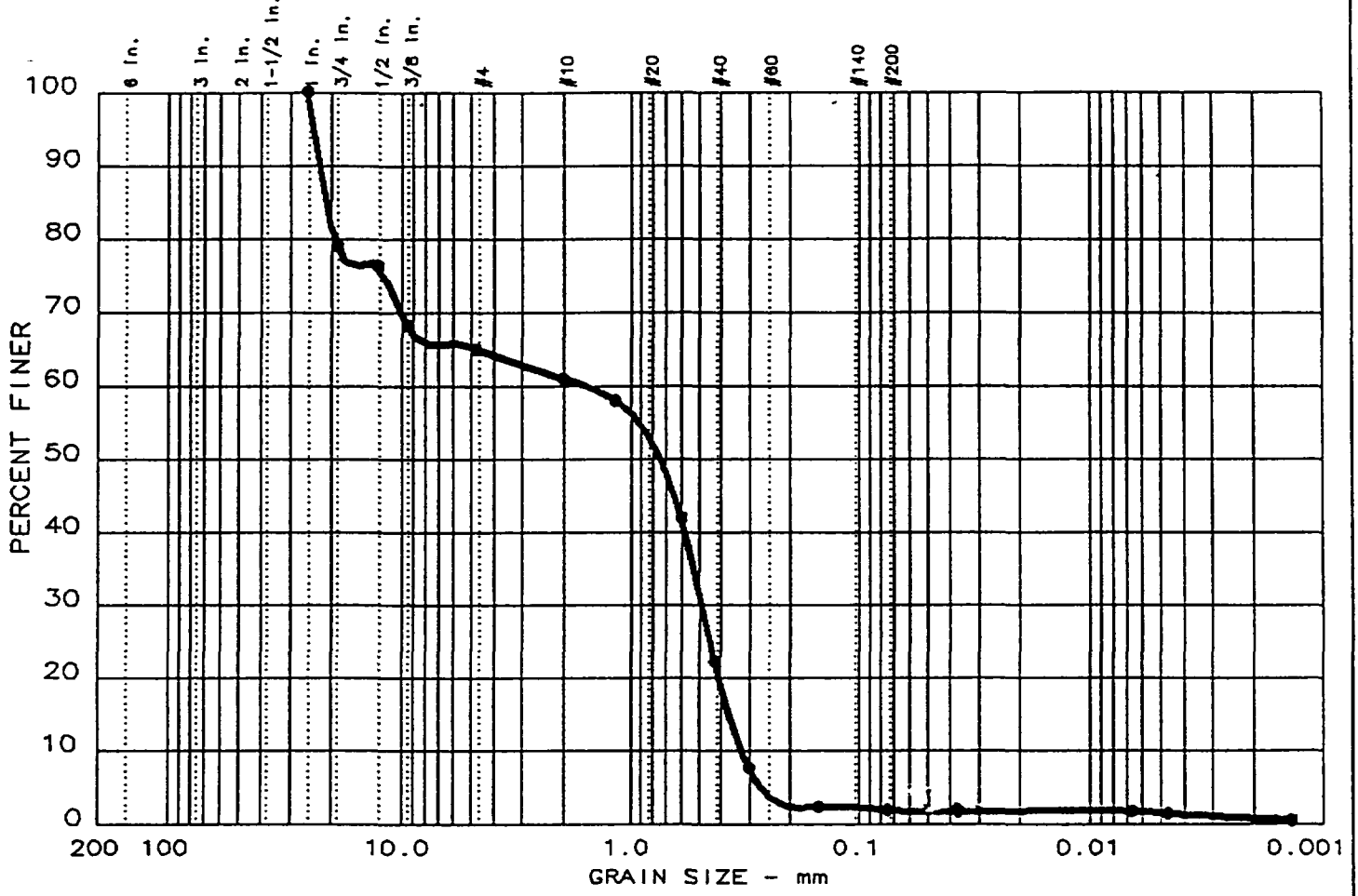
Input By : MES

Checked By : KJL

Approved By : DWA

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	35.1	63.0	0.4	1.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	-----	-----	21.18	1.59	0.73	0.485	0.3673	0.3232	0.46	4.9

MATERIAL DESCRIPTION	USCS	AASHTO
● Black F-C SAND & GRAVEL, Trace Silt & Clay	SP	

Project No.: 94050.33
Project: Beloit Corp, Job # 3856.0123
● Location: Sample SD10 Sampled 11/03/95

Date: December 1, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested BY : DWA

Input By : MES

Checked By : KJL

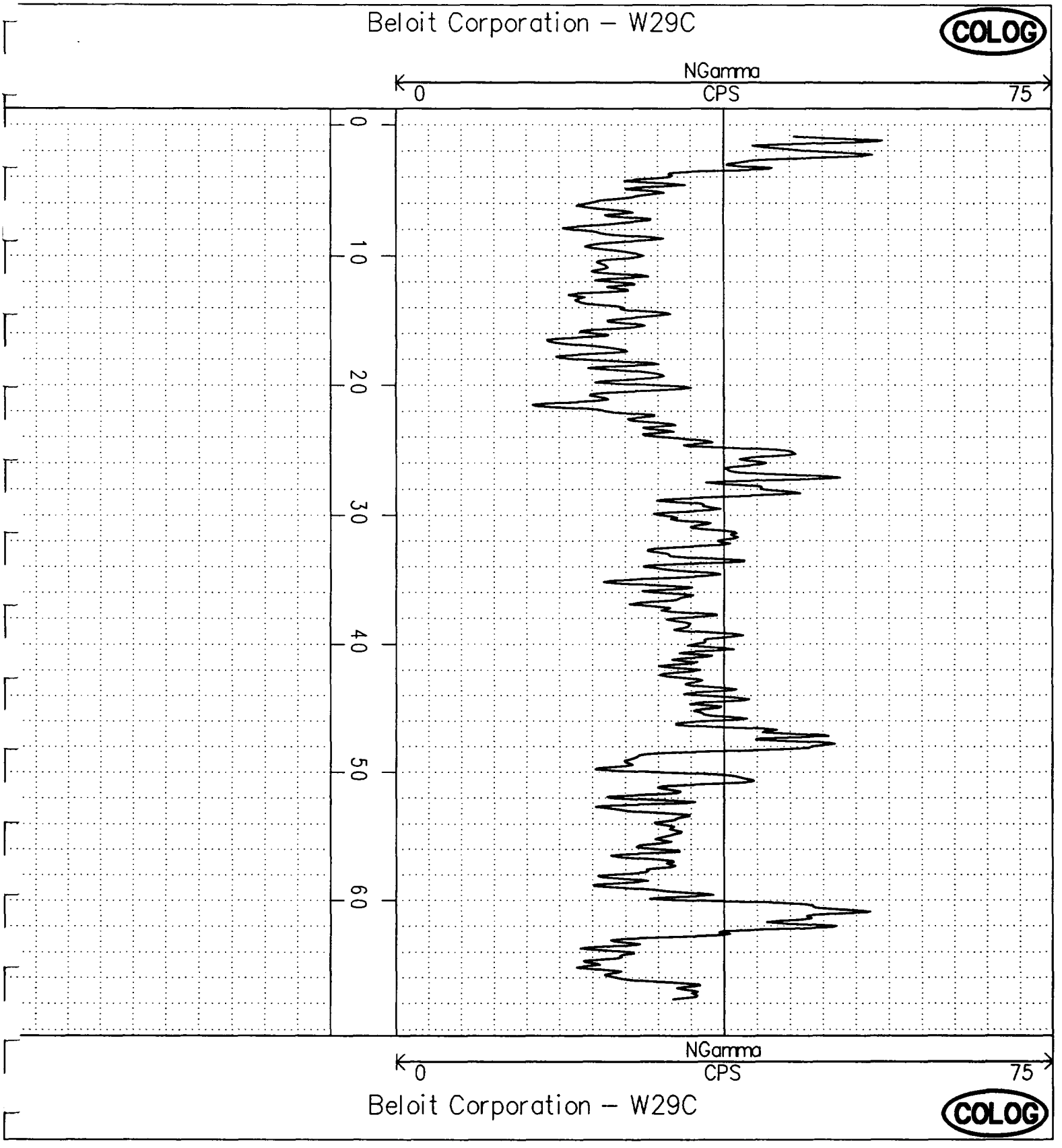
Approved By :

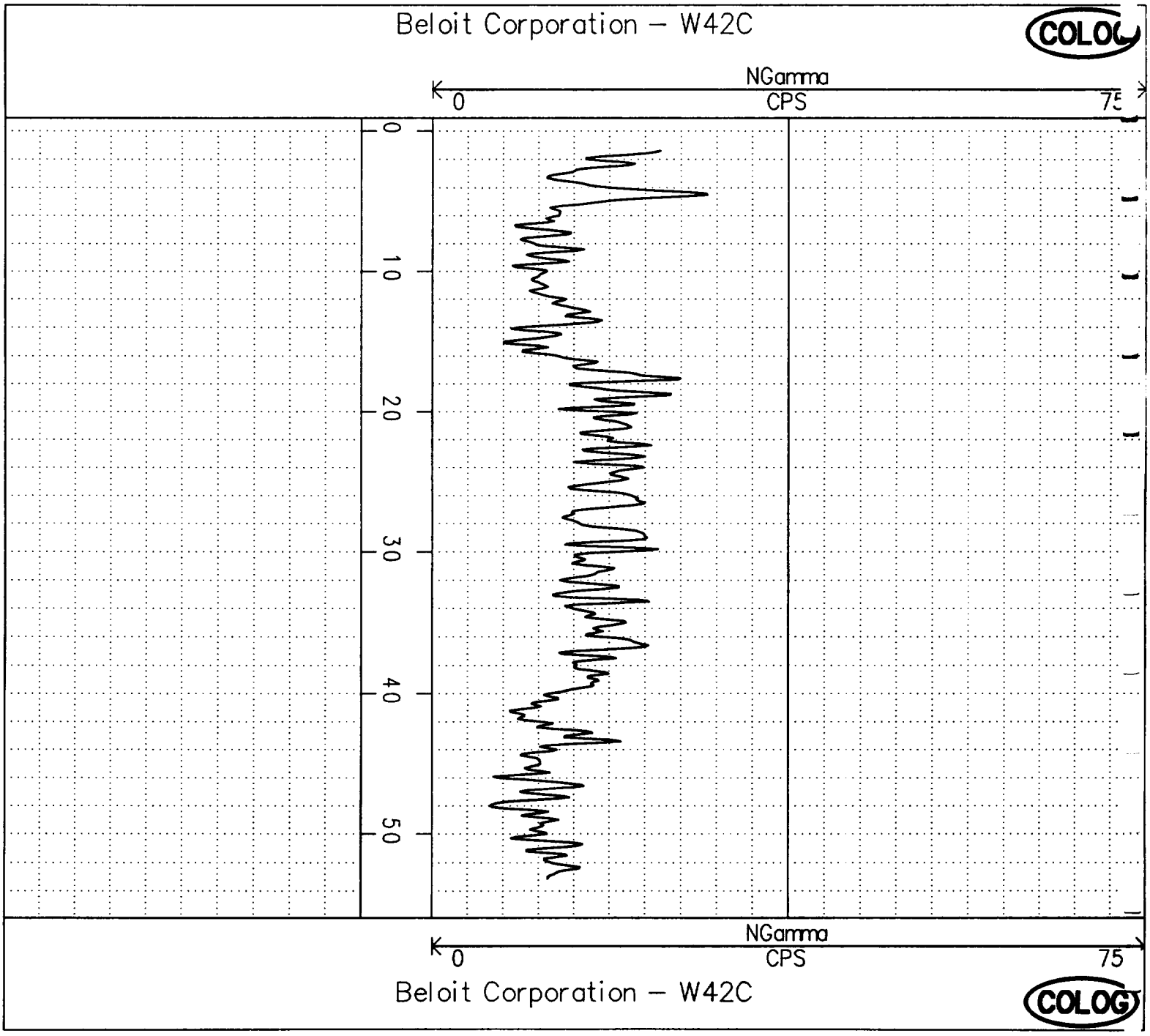
Figure No. _____

000010

E

GEOPHYSICAL LOGS


Beloit Corporation – W29C
COLOG
NGamma
0
CPS
75
0
10
20
30
40
50
60
NGamma
0
CPS
75
Beloit Corporation – W29C
COLOG


Beloit Corporation – W42C
COLOG
NGamma
0
CPS
75
0
10
20
30
40
50
NGamma
0
CPS
75
Beloit Corporation – W42C
COLOG

F

WELL CONSTRUCTION DOCUMENTATION

Illinois Environmental Protection Agency — Well Completion Report

Site #: 201035003 County: Winnebago Well #: W29C

Site Name: Beloit Corporation RI/FS Grid Coordinate: Northing: 2113240.7 Easting: 797023.7

Drilling Contractor: Layne Northwest Date Drilled Start: 11/1/95

Driller: D. Jones Geologist: R.J. Ramsby Date Completed: 11/2/95

Drilling Method: Dual Tube Reverse Circulation Drilling Fluids (type): Air

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Slurry

Amount of cement: # of bags – bs. per bag

Amount of bentonite: # of bags 4 bs. per bag 50

Type of Bentonite Seal (Granular Pellet): Chipped Bentonite

Amount of bentonite: # of bags 0.5 bs. per bag 50

Type of Sand Pack: #20/30 Silica

Source of Sand: Red Flint Filter Sands and Gravel

Amount of Sand: # of ba 3 lbs. per bag 50

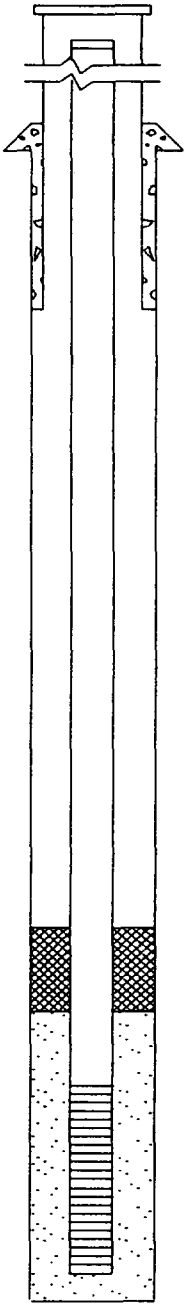
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint	Flush Threaded Joint			
Riser pipe above w.t.			Sch. 40	
Riser pipe below w.t.	#304		Sch. 40	
Screen	#304 Wire Wound Continuous			
Coupling joint screen to riser	Flush Threaded Joint			
Protective casing				Aluminum

Measurements

to .01 (where applicable)

Riser pipe length	63.5 ft
Protective casing length	1.0 ft (flushmount)
Screen length	5.0 ft
Bottom of screen to end cap	0.35 ft
Top of screen to first joint	0.15 ft
Total length of casing	69.0 ft
Screen slot size	No. 10 (0.010")
% of openings in screen	Continuous
Diameter of borehole (in.)	6.5
ID of riser pipe (in.)	2.0



Elevations - 0.01 ft.

	748.36	MSL Top of Protective Casing
	747.90	MSL Top of Riser Pipe
-0.46	XXX	ft. Casing Stickup
0.0	748.4	MSL Ground Surface
1.5	746.9	ft. Top of annular sealant
50.9	697.5	ft. Top of Seal
12.1	XXX	ft. Total Seal Interval
63.0	685.4	ft. Top of Sand
64.0	684.4	ft. Top of Screen
5.5	XXX	ft. Total Screen Interval
69.5	678.9	ft. Bottom of Screen
70.0	678.4	ft. Bottom of Borehole

Completed by: R.J. Ramsby Surveyed by: Vierbicher & Assoc. Ill. registration #:

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Illinois Environmental Protection Agency — **Well Completion Report**

Site #: 201035003 County Winnebago Well # W42

Site Name: Beloit Corporation RI/FS Grid Coordinate: Northing: 2115221.8 Easting: 796106.0

Drilling Contractor: Layne Northwest Date Drilled Start: 11/6/95

Driller: D. Jones Geologist: R.J. Ramsby Date Completed: 11/7/95

Drilling Method: Dual Tube Reverse Circulation Drilling Fluids (type): Air

Annular Space Details

Type of Surface Seal: Bentonite

Type of Annular Sealant: Chipped Bentonite

Amount of cement: # of bags -- bs. per bag

Amount of bentonite: # of bags 7 bs. per bag 50

Type of Bentonite Seal (Granular Pellet): Chipped Bentonite

Amount of bentonite: # of bags -- bs. per bag

Type of Sand Pack: #20/30 Silica

Source of Sand: *Red Flint Filter Sands and Gravel*

Amount of Sand: # of ba 4 lbs. per bag 50

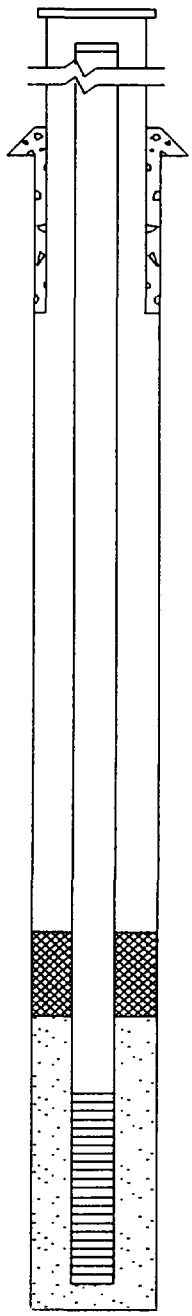
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint	Flush Threaded Joint			
Riser pipe above w.t.			Sch. 40	
Riser pipe below w.t.	NA			
Screen	#304 Wire Wound Continuous			
Coupling joint screen to riser	Flush Threaded Joint			
Protective casing				Steel

Measurements

to .01 (where applicable)

Riser pipe length	17.0 ft
Protective casing length	7.0 ft
Screen length	9.7 ft
Bottom of screen to end cap	0.35 ft
Top of screen to first joint	0.25 ft
Total length of casing	27.3 ft
Screen slot size	No. 10 (0.010")
% of openings in screen	Continuous
Diameter of borehole (in.)	6.5
ID of riser pipe (in.)	2.0



Elevations - 0.01 ft.

	749.61	MSL Top of Protective Casing
	749.68	MSL Top of Riser Pipe
2.78	XXX	ft. Casing Stickup
0.0	746.9	MSL Ground Surface
0.0	746.9	ft. Top of annular sealant
0.0	746.9	ft. Top of Seal
13.0	XXX	ft. Total Seal Interval
13.0	733.9	ft. Top of Sand
14.2	732.7	ft. Top of Screen
10.3	XXX	ft. Total Screen Interval
24.5	722.4	ft. Bottom of Screen
64.0	682.9	ft. Bottom of Borehole

Completed by: R.J. Ramsby Surveyed by: Vierbicher & Assoc. Ill. registration #:

J:\3856\Gint\W42.xls

G

WELL DEVELOPMENT FORMS

MONTGOMERY WATSON

MONITORING WELL DEVELOPMENT SUMMARY

Project Name	Beloit Corporation RI/FS	Well No.	W29C
Location	Rockton, Illinois	Project No.	3856.0125
Developed By	S. Wiskes	Checked By	J. Ramsby

1. Can this well be purged dry? ■ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐
surged with bailer and pumped	■
surged with block and bailed	☐
surged with block and pumped	☐
surged with block, bailed and pumped	☐
compressed air	☐
bailed only	☐
pumped only	☐
pumped slowly	☐
Other _____	☐

3. Time spent developing well: 120 min.

4. Total well depth (TOC) (From well construction summary): 69.0 ft.

Measured well depth (Before): 69.0 ft.

Measured well depth (After): 69.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 10.4 gal.

7. Volume of water removed from well: 85.0 gal.

Relative recovery rate _____ ft. per _____ min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: _____

	Before Development	After Development
10 Depth to Water (from top of well casing)	a. 23.90 ft.	____ ft.
Date:	b. 11 / 13 / 95 (mm dd yy)	11 / 13 / 95 (mm dd yy)
Time:	c. 13 : 10 ☐ a.m. ■ p.m.	15 : 10 ☐ a.m. ■ p.m.
11 Sediment in well bottom:	0.0 inches	0.0 inches
12 Water Observations:	Clear ☐ Turbid ■ (Describe)	Clear ■ Turbid ☐ (Describe)
Color	Light Gray	Clear
Odor	None	None
Turbidity	Slight	Clear
HNu		

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 3.2

Well casing Vol. (gallons) $0.16r^2 l$ = 7.2

Saturated length of sand pack (ft.) (ls) 7.0

Length of water column (ft.) (l) 45.1

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

13 Total suspended solids (500 ml Unfiltered)	_____ mg/l	_____ mg/l
14. COD (250 ml Unfiltered Sulfuric)	_____ mg/l (BEFORE)	_____ mg/l (AFTER)

Time	Gallons Purged	pH	Spec. Cond.	T deg. C	Spec. Cond. at 25 deg. C	Color	Odor	Turb.	Comment

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MONTGOMERY WATSON

MONITORING WELL DEVELOPMENT SUMMARY

Project Name: Beloit Corporation RI/FS | Well No.: W42
Location: Rockton, Illinois | Project No.: 3856.0125
Developed By: J. Hurtenbach/S. Wiskes | Checked By: J. Ramsby

1. Can this well be purged dry? ■ Yes ☐ No

2. Well development method

surged with bailer and bailed	■
surged with bailer and pumped	■
surged with block and bailed	☐
surged with block and pumped	☐
surged with block, bailed and pumped	☐
compressed air	☐
bailed only	☐
pumped only	☐
pumped slowly	☐
Other	☐

3. Time spent developing well: 20 min.

4. Total well depth (TOC) (From well construction summary): 273 ft.

Measured well depth (Before): 273 ft.

Measured well depth (After): 273 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 4.7 gal.

7. Volume of water removed from well: 160 gal.

Relative recovery rate: _____ ft. per. _____ min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: _____

	Before Development	After Development
10 Depth to Water (from top of well casing)	a. 19.69 ft.	_____ ft.
Date:	b. 11 / 8 / 95 (mm dd yy)	11 / 13 / 9 (mm dd yy)
Time:	c. 15 : 18 ■ p.m. ☐ a.m.	15 : 40 ■ p. ☐ a.m.
11 Sediment in well bottom:	0.0 inches	0.0 inches
12 Water Observations:	Clear ☐ Turbid ■ (Describe)	Clear ☐ Turbid ■ (Describe)
Color	Brown	Light Brown
Odor	None	None
Turbidity	Very	Moderate
HNu		

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 3.5

Well casing Vol. (gallons) $0.16r^2 l$ = 1.2

Saturated length of sand pack (ft.) (ls): 7.6

Length of water column (ft.) (l): 7.6

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

13 Total suspended solids (500 ml Unfiltered): _____ mg/l | _____ mg/l

14. COD (250 ml Unfiltered Sulfuric): _____ mg/l (BEFORE) | _____ mg/l (AFTER)

Time	Gallons Purged	pH	Spec. Cond.	T deg. C	Spec. Cond. at 25 deg. C	Color	Odor	Turb.	Comment
3:18	Surge					Brown	None	Very	
3:25	0.5					Brown	None	Very	Whole Pump
3:29	5.0					Brown	None	Very	Pumped Dry
3:35	6.0					Brown	None	Very	Bailed Dry

H

ANALYTICAL RESULTS

H1

Data Quality Summary

H1

DATA QUALITY SUMMARY

ANALYTICAL DATA QUALITY SUMMARY

Analytical data generated for the Phase 3 of the Beloit Corporation - Blackhawk Facility RI/FS has been computerized in a format organized to facilitate data review and evaluation. The results of soil and groundwater sampling and analysis are organized by sample type (i.e., groundwater, surface water, and sediment) and by analytical method (VOCs, SVOCs, Pesticide/PCBs and metals). All compounds included in the analysis are presented for each sample. Each sample has three columns: 1) concentration detected (identified by the appropriate units), 2) laboratory qualifiers and data validation qualifiers (LQ/DVQ), and 3) reported detection limit (RDL). RDLs have been corrected for any dilutions and for percent moisture for soils. Note that a blank in the concentration column indicates the compound was not detected.

SUMMARY OF DATA QUALIFIER DEFINITIONS

Laboratory qualified data are flagged by the performing laboratory. Data may be further qualified by Montgomery Watson personnel during the data validation process. Data qualifiers are letter or symbol codes as outlined below. If data are qualified, the qualifiers are presented with results. The laboratory qualifiers (LQ) and data validation qualifiers (DVQ) are presented with the data, separated by a "/".

Laboratory Qualifier Definitions

The following qualifiers were used by laboratories performing the various analyses. The qualifiers defined below are presented in the "LQ" column adjacent to the result. Note: all possible relevant qualifiers potentially used by the laboratory for metals, VOC, and SVOC analysis are included here for reference, whether they apply to these specific results or not.

The laboratory-provided qualifiers will include:

- Non-detects
- Concentration below required detection limit
- Estimated concentration due to poor QC data
- Concentration of chemical also found in the laboratory blank.

Laboratory Qualifiers for Organic Analysis

- U - Indicates the compound was analyzed for, but was not detected. The sample quantitation limit is corrected for dilution and, in the case of soil samples, for percent moisture.

- J - The associated numerical value is an estimated quantity, because the value was less than the CRQL. TICs are flagged as estimated (J).

- N - Indicates presumptive evidence of a compound. This flag is only used for TICs where a specific compound identification is based on a mass spectral library search.

- B - This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

- E - This flag identifies a compound where the concentration exceeded the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed. If the dilution of the extract cause any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses are reported.

- D - This flag identifies a compound that was identified in an analysis at a secondary dilution factor.

- P - This flag is used for a pesticide/PCB target compound when there is greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two values is reported.

- C - This flag applies to pesticide/PCB results where the identification has been confirmed by GC/MS.

- A - This flag indicates that a TIC is a suspected aldol condensation product.

- X - X, Y, and Z flags may be used by the laboratory to properly define the results. In this project, X is used to indicate results that were manually calculated (as opposed to computer generated) by the laboratory.

Laboratory Qualifiers for Inorganic Analyses

- K - This flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit (PQL). (Note: in order to prevent confusion, Montgomery Watson uses "K" instead of the "B" laboratory qualifier for inorganics as used by the EPA to indicate the result is 'bracketed' by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

- U - Indicates analyte was analyzed for, but was not detected. The value reported is the instrument detection limit value (e.g., 10U).

- E - Indicates the value is estimated due to the presence of interference.

- S - Indicates the value was determined by the method of standard addition.

- M - Indicates duplicate injection precision for furnace analysis was not met.

- N - Indicates spike sample recovery was not within control limits.

- * - Indicates duplicate analysis was not within control limits.

- + - Indicates the correlation coefficient for method of standard addition was less than 0.995.

- W - Post-digestion spike for Furnace AA analysis was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.

Data Validation Qualifier Definitions

The data validation process was performed with specific project needs in mind. Data quality objectives and intended data usage, as outlined in the QAPP, were referred to. The data validation qualifiers defined below are presented with the data under the "DVQ" column.

The data validation/review qualifiers will indicate whether the data are,

- Usable as a quantitative concentration
- Usable with caution as an estimated concentration
- Unusable due to out-of-control QC results.

The following qualifiers were used by Montgomery Watson personnel in the validation of laboratory results. Field QC samples (trip blanks, field blanks, field duplicates) were also evaluated during the data validation process. Validation of organics data was performed using *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, U.S. EPA, February 1994. Inorganics data validation was performed using

USEPA Contract Laboratory Program National Functional Guideline for Inorganic Data Review, U.S. EPA, February 1994.

Data Validation Qualifiers for Organic Analyses

- J - The associated numerical value is an estimated quantity, because quality control criteria were not met and/or because the value was less than the CRQL. TICs are flagged as estimated (J).

- U - Indicates compound was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks, field blanks, or, in the case of VOCs, trip blanks.

- UJ - Indicates the compound was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

- R - Quality control indicates the result is not usable (compound may or may not be present).

Data Qualifiers for Inorganic Analyses

- J - The associated numerical value is an estimated quantity because quality control criteria were not met (i.e., out of control (low or high) spike recoveries, interferences in serial dilution, or poor correlation coefficients).

- R - Quality control data indicates that the value is not usable (analyte may or may not be present).

- U - Indicates analyte was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks or field blanks.

- UJ - The analyte was analyzed for, but was not detected. The associate numerical value is an estimated quantitation limit.

SUMMARY OF QUALIFIED DATA

Data qualified "J" (estimated) during the validation/review process is considered acceptable for use in site evaluation, and is not discussed here. Only results qualified as "R" (unusable) are considered unacceptable for use in site evaluation.

Unusable Data

The following analytical data has been qualified during the review/validation processes as unusable:

- Semivolatile surrogate recoveries for BC-SW01-93 were low. The re-extraction was 2 weeks past hold times, and is therefore flagged unusable. Note that all SVOC results for SW01-03 are acceptable.

- BC-GWFB03-03 - This field blank was collected through the Keck pump immediately after collecting samples from monitoring wells MW23B and MW23 (the two wells with the greatest concentrations). PCE and several additional compounds were detected in this field blank. All laboratory QC was acceptable for this sample, however, no additional samples were collected after this field blank. As such, results from GWF03-03 were not used to qualify data from any of the round three samples. Note the results for FB01-03 and FB02-03 were both acceptable, with only minor detects of acetone in FB02-03.

The remaining data for samples collected during November 1995 Phase 3 field activities is acceptable for use in site evaluation.

JAH/djd/RJR
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3586.0125-MD

H2

SUMMARY OF ORGANIC CRQLS AND LABORATORY MDLS

Table H2
Summary of CRQLs and Laboratory MDLs
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

		CRQLs		MDLs	
		Water	Soil	Water	Soil
PARMNAME	CAS #	ug/L	ug/kg	ug/L	ug/kg
VOLATILES					
Chloromethane	74-87-3	10	10	3.89	3.89
Bromomethane	74-83-9	10	10	1.21	1.21
Vinyl chloride	75-01-4	10	10	3.35	3.35
Chloroethane	75-00-3	10	10	1.56	1.56
Methylene chloride	75-09-2	10	10	1.38	1.38
Acetone	67-64-1	10	10	1.47	1.47
Carbon disulfide	75-15-0	10	10	2.62	2.62
1,1-Dichloroethene	75-35-4	10	10	1.24	1.24
1,1-Dichloroethane	75-34-3	10	10	1.25	1.25
1,2-Dichloroethene (total)	540-59-0	10	10	2.81	2.81
Chloroform	67-66-3	10	10	1.26	1.26
1,2-Dichloroethane	107-06-2	10	10	1.25	1.25
2-Butanone	78-93-3	10	10	2.39	2.39
1,1,1-Trichloroethane	71-55-6	10	10	1.34	1.34
Carbon tetrachloride	56-23-5	10	10	1.26	1.26
Bromodichloromethane	75-27-4	10	10	1.49	1.49
1,2-Dichloropropane	78-87-5	10	10	1.18	1.18
cis-1,3-Dichloropropene	10061-01-5	10	10	1.29	1.29
Trichloroethene	79-01-6	10	10	1.36	1.36
Dibromochloromethane	124-48-1	10	10	1.49	1.49
1,1,2-Trichloroethane	79-00-5	10	10	1.49	1.49
Benzene	71-43-2	10	10	1.33	1.33
trans-1,3-Dichloropropene	10061-02-6	10	10	1.48	1.48
Bromoform	75-25-2	10	10	1.43	1.43
4-Methyl-2-pentanone	108-10-1	10	10	2.02	2.02
2-Hexanone	591-78-6	10	10	2.32	2.32
Tetrachloroethene	127-18-4	10	10	1.24	1.24
1,1,2,2-Tetrachloroethane	79-34-5	10	10	1.23	1.23
Toluene	108-88-3	10	10	1.11	1.11
Chlorobenzene	108-90-7	10	10	1.20	1.20
Ethylbenzene	100-41-4	10	10	1.18	1.18
Styrene	100-42-5	10	10	1.37	1.37
Xylenes (total)	1330-20-7	10	10	4.12	4.12
SEMIVOLATILES					
Phenol	108-95-2	10	330	0.71	42.3
bis(2-Chloroethyl) ether	111-44-4	10	330	0.79	41.4
2-Chlorophenol	95-57-8	10	330	0.69	31.4
1,3-Dichlorobenzene	541-73-1	10	330	1.09	23.1
1,4-Dichlorobenzene	106-46-7	10	330	1.04	28.5
1,2-Dichlorobenzene	95-50-1	10	330	1.03	28.8
2-Methylphenol	95-48-7	10	330	0.93	31.0
bis(2-Chloroisopropyl)ether	108-60-1	10	330	2.63	33.5
4-Methylphenol	106-44-5	10	330	0.93	32.4
N-Nitroso-di-n-propylamine	621-64-7	10	330	0.89	37.0
Hexachloroethane	67-72-1	10	330	1.31	33.7
Nitrobenzene	98-95-3	10	330	0.53	29.9
Isophorone	78-59-1	10	330	0.46	34.5

Table H2
Summary of CRQLs and Laboratory MDLs
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

		CRQLs		MDLs	
		Water	Soil	Water	Soil
PARMNAME	CAS #	ug/L	ug/kg	ug/L	ug/kg
2-Nitrophenol	88-75-5	10	330	0.52	34.7
2,4-Dimethylphenol	105-67-9	10	330	2.16	33.0
bis(2-Chloroethoxy)methane	111-91-1	10	330	0.53	30.2
2,4-Dichlorophenol	120-83-2	10	330	0.53	37.6
1,2,4-Trichlorobenzene	120-82-1	10	330	1.29	29.8
Naphthalene	91-20-3	10	330	0.80	32.7
4-Chloroaniline	106-47-8	10	330	0.67	47.6
Hexachlorobutadiene	87-68-3	10	330	1.68	27.3
4-Chloro-3-methylphenol	59-50-7	10	330	0.66	30.4
2-Methylnaphthalene	91-57-6	10	330	0.86	34.4
Hexachlorocyclopentadiene	77-47-4	10	330	na	36.4
2,4,6-Trichlorophenol	88-06-2	10	330	0.74	29.4
2,4,5-Trichlorophenol	95-95-4	20	800	0.56	39.0
2-Chloronaphthalene	91-58-7	10	330	0.83	36.1
2-Nitroaniline	88-74-4	10	800	1.07	49.6
Dimethylphthalate	131-11-3	10	330	2.16	37.1
Acenaphthylene	208-96-8	10	330	0.70	28.4
2,6-Dinitrotoluene	606-20-2	10	330	0.43	32.7
3-Nitroaniline	99-09-2	20	800	0.74	29.4
Acenaphthene	83-32-9	10	330	0.77	41.4
2,4-Dinitrophenol	51-28-5	20	800	2.38	78.9
4-Nitrophenol	100-02-7	20	800	0.80	45.9
Dibenzofuran	132-64-9	10	330	0.66	31.8
2,4-Dinitrotoluene	121-14-2	10	330	0.97	37.0
Diethylphthalate	84-66-2	10	330	3.18	38.6
4-Chlorophenyl-phenylether	7005-72-3	10	330	0.57	31.8
Fluorene	86-73-7	10	330	0.68	34.4
4-Nitroaniline	100-01-6	20	800	0.50	35.6
4,6-Dinitro-2-methylphenol	534-52-1	20	800	0.81	45.2
N-nitrosodiphenylamine	86-30-6	10	330	0.63	21.4
4-Bromophenyl-phenylether	101-55-3	10	330	0.41	36.5
Hexachlorobenzene	118-74-1	10	330	0.57	27.4
Pentachlorophenol	87-86-5	20	800	1.55	45.1
Phenanthrene	85-01-8	10	330	0.42	35.1
Anthracene	120-12-7	10	330	0.48	34.1
Di-n-butylphthalate	84-74-2	10	330	3.20	223.1
Fluoranthene	206-44-0	10	330	0.68	35.9
Pyrene	129-00-0	10	330	0.66	40.5
Butylbenzylphthalate	85-68-7	10	330	5.71	231.1
3,3'-Dichlorobenzidine	91-94-1	10	330	0.62	37.2
Benzo(a)anthracene	56-55-3	10	330	0.50	39.6
Chrysene	218-01-9	10	330	0.47	37.0
bis(2-ethylhexyl)phthalate	117-81-7	10	330	2.10	48.6
Di-n-octyl Phthalate	117-84-0	10	330	0.49	44.2
Benzo(b)fluoranthene	205-99-2	10	330	1.92	47.6
Benzo(k)fluoranthene	207-08-9	10	330	2.18	53.0
Benzo(a)pyrene	50-32-8	10	330	0.76	39.8
Indeno(1,2,3-cd)pyrene	193-39-5	10	330	0.54	33.1
Dibenz(a,h)anthracene	53-70-3	10	330	0.74	43.2

Table H2
Summary of CRQLs and Laboratory MDLs
Beloit Corporation - Blackhawk Facility
Remedial Investigation/Feasibility Study - Phase III

		CRQLs		MDLs	
		Water	Soil	Water	Soil
PARMNAME	CAS #	ug/L	ug/kg	ug/L	ug/kg
Benzo(g,h,i)perylene	191-24-2	10	330	0.65	34.2
Carbazole	86-74-8	10	330	0.41	36.6
PESTICIDE/PCBs					
alpha-BHC	319-84-6	0.05	1.7	0.024	0.67
beta-BHC	319-85-7	0.05	1.7	0.016	0.19
delta-BHC	319-86-8	0.05	1.7	0.012	0.34
gamma-BHC (Lindane)	58-89-9	0.05	1.7	0.022	0.69
Heptachlor	76-44-8	0.05	1.7	0.030	0.82
Aldrin	309-00-2	0.05	1.7	0.012	5.37
Heptachlor epoxide	1024-57-3	0.05	1.7	0.012	0.42
Endosulfan I	959-98-8	0.05	1.7	0.018	0.86
Dieldrin	60-57-1	0.10	3.3	0.046	1.31
4,4'-DDE	72-55-9	0.10	3.3	0.026	0.21
Endrin	72-20-8	0.10	3.3	0.047	1.31
Endosulfan II	33213-65-9	0.10	3.3	0.031	2.72
4,4'-DDD	72-54-8	0.10	3.3	0.051	0.69
Endosulfan sulfate	1031-07-8	0.10	3.3	0.025	0.22
4,4'-DDT	50-29-3	0.10	3.3	0.049	1.01
Methoxychlor	72-43-5	0.50	17	0.22	7.30
Endrin ketone	53494-70-5	0.10	3.3	0.046	0.53
alpha-Chlordane	5103-71-9	0.05	1.7	0.012	0.47
gamma-Chlordane	5103-74-2	0.05	1.7	0.024	0.27
Toxaphene	8001-35-2	5.0	170	1.3	44.4
Aroclor-1016	12674-11-2	1.0	33	0.31	2.12
Aroclor-1221	11104-28-2	2.0	67	0.18	41.6
Aroclor-1232	11141-16-5	1.0	33	0.18	5.88
Aroclor-1242	53469-21-9	1.0	33	0.07	5.55
Aroclor-1248	12672-29-6	1.0	33	0.17	3.74
Aroclor-1254	11097-69-1	1.0	33	0.12	4.37
Aroclor-1260	11096-82-5	1.0	33	0.90	4.84
Endrin aldehyde	7421-93-4	0.10	3.3	0.042	1.10

Notes:
This table summarizes Contract Required Quantitation Limits (CRQLs) and Method Detection Limits (MDLs) for the Beloit Corporation Phase III RI/FS. IEA and MWATs results and the data reports included in Appendix__ include the sample adjusted CRQLs.

CAS # indiciates the the Chemical Abstracts Registry Numbers. CRQLs are from the current SOW.

MDLs are calculated by the laboratory on a periodic basis. The MDL is equal to 3.142 times the standard deviation of seven replicate injections of a standard at the CRQL, and represents the minimum concentration that can be reliably detected above background. Soil MDLs for SVOCs and pesticide/PCBs are calculated by multiplying the water MDL by 33.33 (the conversion factor for using 30 grams of soil rather than 1 liter of liquid for extraction).

Sample Quantitation Limits (SQLs) are the MDL scaled by the sample specific Correction Factor (CF) presented in Table __.

H3

SUMMARY OF ORGANIC SAMPLE CORRECTION FACTORS

Table H3

Summary of Sample Correction Factors
Beloit Corporation - Blackhawk Facility RI/FS
Remedial Investigation/Feasibility Study - Phase III

	CRQL CF			Calculated CF	
SAMPLEID	VOC	SVOC	PPCB	Total Solids %	Dry Wt CF
BC-GWG103D-03	1	NA	NA	NA	1
BC-GWG103S-03	1	NA	NA	NA	1
BC-GWG107-03	1	NA	NA	NA	1
BC-GWG108D-03	1	NA	NA	NA	1
BC-GWG108S-03	1	NA	NA	NA	1
BC-GWW03R-03	1	NA	NA	NA	1
BC-GWW05R-03	1	NA	NA	NA	1
BC-GWW08R-03	1	NA	NA	NA	1
BC-GWW11R-03	1	NA	NA	NA	1
BC-GWW13-03	1	NA	NA	NA	1
BC-GWW14-03	1	NA	NA	NA	1
BC-GWW16R-03	1	NA	NA	NA	1
BC-GWW18-03	1	NA	NA	NA	1
BC-GWW19-03	1	NA	NA	NA	1
BC-GWW19B-03	1	NA	NA	NA	1
BC-GWW21-03	1	NA	NA	NA	1
BC-GWW21B-03	1	NA	NA	NA	1
BC-GWW21B-93	1	NA	NA	NA	1
BC-GWW23-03	16	NA	NA	NA	1
BC-GWW23B-03	10	NA	NA	NA	1
BC-GWW25C-03	1	NA	NA	NA	1
BC-GWW26C-03	1	NA	NA	NA	1
BC-GWW29C-03	1	NA	NA	NA	1
BC-GWW31C-03	1	NA	NA	NA	1
BC-GWW32-03	1	NA	NA	NA	1
BC-GWW34-03	1	NA	NA	NA	1
BC-GWW38-03	2	NA	NA	NA	2
BC-GWW41-03	1	NA	NA	NA	1
BC-GWW41-93	1	NA	NA	NA	1
BC-GWW42-03	1	NA	NA	NA	1
BC-GWW44-03	1	NA	NA	NA	1
BC-GWW44C-93	1	NA	NA	NA	1
BC-GWFB01-03	1	NA	NA	NA	1
BC-GWFB02-03	1	NA	NA	NA	1
BC-GWFB03-03	1	NA	NA	NA	1
BC-GWTB01-03	1	NA	NA	NA	1
BC-SW01-03	1	1	1	NA	1
BC-SW01-93	1	1	1	NA	1
BC-SWTB01-03	1	NA	NA	NA	1

Table H3

Summary of Sample Correction Factors
Beloit Corporation - Blackhawk Facility RI/FS
Remedial Investigation/Feasibility Study - Phase III

	CRQL CF			Calculated CF	
SAMPLEID	VOC	SVOC	PPCB	Total Solids %	Dry Wt CF
BC-SD01	1.10	1.15	1.12	87.1 %	1.15
BC-SD02	1.20	1.15	1.18	87.4 %	1.14
BC-SD03	1.40	1.36	1.35	73.6 %	1.36
BC-SD04	1.30	1.27	1.29	77.4 %	1.29
BC-SD04 Dup	1.20	1.24	1.24	79.8 %	1.25
BC-SD05	1.60	1.61	1.59	66.7 %	1.50
BC-SD06	1.30	1.30	1.29	75.8 %	1.32
BC-SD07	5.10	39.4	4.06	39.8 %	2.51
BC-SD08	1.30	1.24	1.29	73.9 %	1.35
BC-SD09	1.30	1.27	1.29	83.3 %	1.20
BC-SD10	1.20	1.24	1.24	82.1 %	1.22

Notes:
This table summarizes correction factors (CF) to be used to determine compound specific sample quantitation limits (SQLs) for the Beloit Corporation Phase III RI/FS. SQLs are the MDL scaled by the sample specific CF.

The CRQL CF is a unitless value used to adjust the CRQLs presented in the following reports. Note that the CRQL is rounded to the correct number of significant values.

The CF was used to correct for any sample dilutions and, for soils, percent moisture. Corrected results for soils are therefore on a dry weight basis. The calculated CF is to be used to adjust the MDLs presented in Table G2 for the specific sample. The sample specific MDL is the SQL, and is used in risk assessment calculations.

CLP metals results are reported to the Instrument Detection Limit (IDL) which is similar to the MDL, and therefore are not required on this table.

H4

SEDIMENTS ANALYTICAL RESULTS

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: VOC
Generated by: JAH
Date Issued: 20-MAR-96

Parameter	BC-SD01 11/14/95 CONC	LQ/DVQ	RDL	BC-SD02 11/14/95 CONC	LQ/DVQ	RDL	BC-SD03 11/14/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	11.		U/	12.		U/	14.
Bromomethane (UG/KG)		U/	11.		U/	12.		U/	14.
Vinyl chloride (UG/KG)		U/	11.		U/	12.		U/	14.
Chloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
Methylene chloride (UG/KG)		U/	11.		U/	12.		U/	14.
Acetone (UG/KG)		U/UJ	11.		U/UJ	12.		U/UJ	14.
Carbon disulfide (UG/KG)		U/	11.		U/	12.		U/	14.
1,1-Dichloroethene (UG/KG)		U/	11.		U/	12.		U/	14.
1,1-Dichloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
1,2-Dichloroethene (total) (UG/KG)		U/	11.		U/	12.		U/	14.
Chloroform (UG/KG)		U/	11.		U/	12.		U/	14.
1,2-Dichloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
2-Butanone (UG/KG)		U/	11.		U/UJ	12.		U/UJ	14.
1,1,1-Trichloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
Carbon tetrachloride (UG/KG)		U/	11.		U/	12.		U/	14.
Bromodichloromethane (UG/KG)		U/	11.		U/	12.		U/	14.
1,2-Dichloropropane (UG/KG)		U/	11.		U/	12.		U/	14.
cis-1,3-Dichloropropene (UG/KG)		U/	11.		U/	12.		U/	14.
Trichloroethene (UG/KG)		U/	11.		U/	12.		U/	14.
Dibromochloromethane (UG/KG)		U/	11.		U/	12.		U/	14.
1,1,2-Trichloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
Benzene (UG/KG)		U/	11.		U/	12.		U/	14.
trans-1,3-Dichloropropene (UG/KG)		U/	11.		U/	12.		U/	14.
Bromoform (UG/KG)		U/	11.		U/	12.		U/	14.
4-Methyl-2-pentanone (UG/KG)		U/	11.		U/UJ	12.		U/UJ	14.
2-Hexanone (UG/KG)		U/UJ	11.		U/UJ	12.		U/UJ	14.
Tetrachloroethene (UG/KG)		U/	11.		U/	12.		U/	14.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	11.		U/	12.		U/	14.
Toluene (UG/KG)		U/	11.		U/	12.		U/	14.
Chlorobenzene (UG/KG)		U/	11.		U/	12.		U/	14.
Ethylbenzene (UG/KG)		U/	11.		U/	12.		U/	14.
Styrene (UG/KG)		U/	11.		U/	12.		U/	14.
Xylenes (total) (UG/KG)		U/	11.		U/	12.		U/	14.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: VOC

Parameter	BC-SD04 11/15/95 CONC	LQ/DVQ	RDL	BC-SD04 Dup 11/15/95 CONC	LQ/DVQ	RDL	BC-SD05 11/15/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	13.		U/	12.		U/	16.
Bromomethane (UG/KG)		U/	13.		U/	12.		U/	16.
Vinyl chloride (UG/KG)		U/	13.		U/	12.		U/	16.
Chloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
Methylene chloride (UG/KG)		U/	13.		U/	12.		U/	16.
Acetone (UG/KG)	69.	/J	13.		U/UJ	12.	20.	/J	16.
Carbon disulfide (UG/KG)		U/	13.		U/	12.		U/	16.
1,1-Dichloroethene (UG/KG)		U/	13.		U/	12.		U/	16.
1,1-Dichloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
1,2-Dichloroethene (total) (UG/KG)		U/	13.		U/	12.		U/	16.
Chloroform (UG/KG)		U/	13.		U/	12.		U/	16.
1,2-Dichloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
2-Butanone (UG/KG)	11.	J/J	13.		U/UJ	12.	4.	J/J	16.
1,1,1-Trichloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
Carbon tetrachloride (UG/KG)		U/	13.		U/	12.		U/	16.
Bromodichloromethane (UG/KG)		U/	13.		U/	12.		U/	16.
1,2-Dichloropropane (UG/KG)		U/	13.		U/	12.		U/	16.
cis-1,3-Dichloropropene (UG/KG)		U/	13.		U/	12.		U/	16.
Trichloroethene (UG/KG)		U/	13.		U/	12.		U/	16.
Dibromochloromethane (UG/KG)		U/	13.		U/	12.		U/	16.
1,1,2-Trichloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
Benzene (UG/KG)		U/	13.		U/	12.		U/	16.
trans-1,3-Dichloropropene (UG/KG)		U/	13.		U/	12.		U/	16.
Bromoform (UG/KG)		U/	13.		U/	12.		U/	16.
4-Methyl-2-pentanone (UG/KG)		U/	13.		U/UJ	12.		U/UJ	16.
2-Hexanone (UG/KG)		U/UJ	13.		U/UJ	12.		U/UJ	16.
Tetrachloroethene (UG/KG)		U/	13.		U/	12.		U/	16.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	13.		U/	12.		U/	16.
Toluene (UG/KG)		U/	13.		U/	12.		U/	16.
Chlorobenzene (UG/KG)		U/	13.		U/	12.		U/	16.
Ethylbenzene (UG/KG)		U/	13.		U/	12.		U/	16.
Styrene (UG/KG)		U/	13.		U/	12.		U/	16.
Xylenes (total) (UG/KG)		U/	13.		U/	12.		U/	16.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: VOC

Parameter	BC-SD06 11/15/95 CONC	LQ/DVQ	RDL	BC-SD07 11/14/95 CONC	LQ/DVQ	RDL	BC-SD08 11/14/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Bromomethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Vinyl chloride (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Chloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Methylene chloride (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Acetone (UG/KG)	22.	/J	13.	160.	/J	51.		U/UJ	13.
Carbon disulfide (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,1-Dichloroethene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,1-Dichloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,2-Dichloroethene (total) (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Chloroform (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,2-Dichloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
2-Butanone (UG/KG)		U/UJ	13.	36.	J/J	51.		U/UJ	13.
1,1,1-Trichloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Carbon tetrachloride (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Bromodichloromethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,2-Dichloropropane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
cis-1,3-Dichloropropene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Trichloroethene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Dibromochloromethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,1,2-Trichloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Benzene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
trans-1,3-Dichloropropene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Bromoform (UG/KG)		U/	13.		U/UJ	51.		U/	13.
4-Methyl-2-pentanone (UG/KG)		U/UJ	13.		U/UJ	51.		U/UJ	13.
2-Hexanone (UG/KG)		U/UJ	13.		U/UJ	51.		U/UJ	13.
Tetrachloroethene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Toluene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Chlorobenzene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Ethylbenzene (UG/KG)		U/	13.	150.	/J	51.		U/	13.
Styrene (UG/KG)		U/	13.		U/UJ	51.		U/	13.
Xylenes (total) (UG/KG)		U/	13.	110.	J/J	51.		U/	13.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: VOC

Parameter	BC-SD09 11/14/95 CONC	LQ/DVQ	RDL	BC-SD10 11/14/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	13.		U/	12.
Bromomethane (UG/KG)		U/	13.		U/	12.
Vinyl chloride (UG/KG)		U/	13.		U/	12.
Chloroethane (UG/KG)		U/	13.		U/	12.
Methylene chloride (UG/KG)		U/	13.		U/	12.
Acetone (UG/KG)	18.	/J	13.		U/UJ	12.
Carbon disulfide (UG/KG)		U/	13.		U/	12.
1,1-Dichloroethene (UG/KG)		U/	13.		U/	12.
1,1-Dichloroethane (UG/KG)		U/	13.		U/	12.
1,2-Dichloroethene (total) (UG/KG)		U/	13.		U/	12.
Chloroform (UG/KG)		U/	13.		U/	12.
1,2-Dichloroethane (UG/KG)		U/	13.		U/	12.
2-Butanone (UG/KG)		U/	13.		U/	12.
1,1,1-Trichloroethane (UG/KG)		U/	13.		U/	12.
Carbon tetrachloride (UG/KG)		U/	13.		U/	12.
Bromodichloromethane (UG/KG)		U/	13.		U/	12.
1,2-Dichloropropane (UG/KG)		U/	13.		U/	12.
cis-1,3-Dichloropropene (UG/KG)		U/	13.		U/	12.
Trichloroethene (UG/KG)		U/	13.		U/	12.
Dibromochloromethane (UG/KG)		U/	13.		U/	12.
1,1,2-Trichloroethane (UG/KG)		U/	13.		U/	12.
Benzene (UG/KG)		U/	13.		U/	12.
trans-1,3-Dichloropropene (UG/KG)		U/	13.		U/	12.
Bromoform (UG/KG)		U/	13.		U/	12.
4-Methyl-2-pentanone (UG/KG)		U/	13.		U/	12.
2-Hexanone (UG/KG)		U/UJ	13.		U/UJ	12.
Tetrachloroethene (UG/KG)		U/	13.		U/	12.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	13.		U/	12.
Toluene (UG/KG)		U/	13.		U/	12.
Chlorobenzene (UG/KG)		U/	13.		U/	12.
Ethylbenzene (UG/KG)		U/	13.		U/	12.
Styrene (UG/KG)		U/	13.		U/	12.
Xylenes (total) (UG/KG)		U/	13.		U/	12.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC
Generated by: JAH
Date Issued: 04-APR-96

	BC-SD01 11/14/95			BC-SD02 11/14/95			BC-SD03 11/14/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)		U/	380.		U/	380.		U/	450.
2-Chlorophenol (UG/KG)		U/	380.		U/	380.		U/	450.
1,3-Dichlorobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
1,4-Dichlorobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
1,2-Dichlorobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
2-Methylphenol (UG/KG)		U/	380.		U/	380.		U/	450.
4-Methylphenol (UG/KG)		U/	380.		U/	380.		U/	450.
N-Nitroso-di-n-propylamine (UG/KG)		U/	380.		U/	380.		U/	450.
Hexachloroethane (UG/KG)		U/	380.		U/	380.		U/	450.
Nitrobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
Isophorone (UG/KG)		U/	380.		U/	380.		U/	450.
2-Nitrophenol (UG/KG)		U/	380.		U/	380.		U/	450.
2,4-Dimethylphenol (UG/KG)		U/	380.		U/	380.		U/	450.
bis(2-Chloroethoxy)methane (UG/KG)		U/	380.		U/	380.		U/	450.
2,4-Dichlorophenol (UG/KG)		U/	380.		U/	380.		U/	450.
1,2,4-Trichlorobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
Naphthalene (UG/KG)		U/	380.		U/	380.		U/	450.
4-Chloroaniline (UG/KG)		U/	380.		U/	380.		U/	450.
Hexachlorobutadiene (UG/KG)		U/	380.		U/	380.		U/	450.
4-Chloro-3-methylphenol (UG/KG)		U/	380.		U/	380.		U/	450.
2-Methylnaphthalene (UG/KG)		U/	380.		U/	380.		U/	450.
Hexachlorocyclopentadiene (UG/KG)		U/	380.		U/	380.		U/	450.
2,4,6-Trichlorophenol (UG/KG)		U/	380.		U/	380.		U/	450.
2,4,5-Trichlorophenol (UG/KG)		U/	910.		U/	930.		U/	1100.
2-Chloronaphthalene (UG/KG)		U/	380.		U/	380.		U/	450.
2-Nitroaniline (UG/KG)		U/	910.		U/	930.		U/	1100.
Dimethylphthalate (UG/KG)		U/	380.		U/	380.		U/	450.
Acenaphthylene (UG/KG)		U/	380.		U/	380.		U/	450.
2,6-Dinitrotoluene (UG/KG)		U/	380.		U/	380.		U/	450.
3-Nitroaniline (UG/KG)		U/	910.		U/	930.		U/	1100.
Acenaphthene (UG/KG)		U/	380.		U/	380.		U/	450.
2,4-Dinitrophenol (UG/KG)		U/	910.		U/	930.		U/	1100.
4-Nitrophenol (UG/KG)		U/	910.		U/	930.		U/	1100.
Dibenzofuran (UG/KG)		U/	380.		U/	380.		U/	450.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

	BC-SD04 11/15/95			BC-SD04 Dup 11/15/95			BC-SD05 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)		U/	420.		U/	410.		U/	530.
2-Chlorophenol (UG/KG)		U/	420.		U/	410.		U/	530.
1,3-Dichlorobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
1,4-Dichlorobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
1,2-Dichlorobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
2-Methylphenol (UG/KG)		U/	420.		U/	410.		U/	530.
4-Methylphenol (UG/KG)		U/	420.		U/	410.		U/	530.
N-Nitroso-di-n-propylamine (UG/KG)		U/	420.		U/	410.		U/	530.
Hexachloroethane (UG/KG)		U/	420.		U/	410.		U/	530.
Nitrobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
Isophorone (UG/KG)		U/	420.		U/	410.		U/	530.
2-Nitrophenol (UG/KG)		U/	420.		U/	410.		U/	530.
2,4-Dimethylphenol (UG/KG)		U/	420.		U/	410.		U/	530.
bis(2-Chloroethoxy)methane (UG/KG)		U/	420.		U/	410.		U/	530.
2,4-Dichlorophenol (UG/KG)		U/	420.		U/	410.		U/	530.
1,2,4-Trichlorobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
Naphthalene (UG/KG)		U/	420.		U/	410.		U/	530.
4-Chloroaniline (UG/KG)		U/	420.		U/	410.		U/	530.
Hexachlorobutadiene (UG/KG)		U/	420.		U/	410.		U/	530.
4-Chloro-3-methylphenol (UG/KG)		U/	420.		U/	410.		U/	530.
2-Methylnaphthalene (UG/KG)		U/	420.		U/	410.		U/	530.
Hexachlorocyclopentadiene (UG/KG)		U/	420.		U/	410.		U/	530.
2,4,6-Trichlorophenol (UG/KG)		U/	420.		U/	410.		U/	530.
2,4,5-Trichlorophenol (UG/KG)		U/	1000.		U/	1000.		U/	1300.
2-Chloronaphthalene (UG/KG)		U/	420.		U/	410.		U/	530.
2-Nitroaniline (UG/KG)		U/	1000.		U/	1000.		U/	1300.
Dimethylphthalate (UG/KG)		U/	420.		U/	410.		U/	530.
Acenaphthylene (UG/KG)		U/	420.		U/	410.		U/	530.
2,6-Dinitrotoluene (UG/KG)		U/	420.		U/	410.		U/	530.
3-Nitroaniline (UG/KG)		U/	1000.		U/	1000.		U/	1300.
Acenaphthene (UG/KG)		U/	420.		U/	410.		U/	530.
2,4-Dinitrophenol (UG/KG)		U/	1000.		U/	1000.		U/	1300.
4-Nitrophenol (UG/KG)		U/	1000.		U/	1000.		U/	1300.
Dibenzofuran (UG/KG)		U/	420.		U/	410.		U/	530.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

Parameter	BC-SD06 11/15/95 CONC	LQ/DVQ	RDL	BC-SD07 11/14/95 CONC	LQ/DVQ	RDL	BC-SD08 11/14/95 CONC	LQ/DVQ	RDL
Phenol (UG/KG)		U/	430.		U/	13000.		U/	410.
2-Chlorophenol (UG/KG)		U/	430.		U/	13000.		U/	410.
1,3-Dichlorobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
1,4-Dichlorobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
1,2-Dichlorobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
2-Methylphenol (UG/KG)		U/	430.		U/	13000.		U/	410.
4-Methylphenol (UG/KG)		U/	430.		U/	13000.		U/	410.
N-Nitroso-di-n-propylamine (UG/KG)		U/	430.		U/	13000.		U/	410.
Hexachloroethane (UG/KG)		U/	430.		U/	13000.		U/	410.
Nitrobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
Isophorone (UG/KG)		U/	430.		U/	13000.		U/	410.
2-Nitrophenol (UG/KG)		U/	430.		U/	13000.		U/	410.
2,4-Dimethylphenol (UG/KG)		U/	430.		U/	13000.		U/	410.
bis(2-Chloroethoxy)methane (UG/KG)		U/	430.		U/	13000.		U/	410.
2,4-Dichlorophenol (UG/KG)		U/	430.		U/	13000.		U/	410.
1,2,4-Trichlorobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
Naphthalene (UG/KG)		U/	430.	24000.	/	13000.		U/	410.
4-Chloroaniline (UG/KG)		U/	430.		U/	13000.		U/	410.
Hexachlorobutadiene (UG/KG)		U/	430.		U/	13000.		U/	410.
4-Chloro-3-methylphenol (UG/KG)		U/	430.		U/	13000.		U/	410.
2-Methylnaphthalene (UG/KG)		U/	430.	48000.	/	13000.		U/	410.
Hexachlorocyclopentadiene (UG/KG)		U/	430.		U/	13000.		U/	410.
2,4,6-Trichlorophenol (UG/KG)		U/	430.		U/	13000.		U/	410.
2,4,5-Trichlorophenol (UG/KG)		U/	1000.		U/	33000.		U/	1000.
2-Chloronaphthalene (UG/KG)		U/	430.		U/	13000.		U/	410.
2-Nitroaniline (UG/KG)		U/	1000.		U/	33000.		U/	1000.
Dimethylphthalate (UG/KG)		U/	430.		U/	13000.		U/	410.
Acenaphthylene (UG/KG)		U/	430.	7600.	J/	13000.		U/	410.
2,6-Dinitrotoluene (UG/KG)		U/	430.		U/	13000.		U/	410.
3-Nitroaniline (UG/KG)		U/	1000.		U/	33000.		U/	1000.
Acenaphthene (UG/KG)		U/	430.	40000.	/	13000.		U/	410.
2,4-Dinitrophenol (UG/KG)		U/	1000.		U/	33000.		U/	1000.
4-Nitrophenol (UG/KG)		U/	1000.		U/	33000.		U/	1000.
Dibenzofuran (UG/KG)		U/	430.	7400.	J/	13000.		U/	410.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

Parameter	BC-SD09 11/14/95 CONC	LQ/DVQ	RDL	BC-SD10 11/14/95 CONC	LQ/DVQ	RDL
Phenol (UG/KG)		U/	420.		U/	410.
2-Chlorophenol (UG/KG)		U/	420.		U/	410.
1,3-Dichlorobenzene (UG/KG)		U/	420.		U/	410.
1,4-Dichlorobenzene (UG/KG)		U/	420.		U/	410.
1,2-Dichlorobenzene (UG/KG)		U/	420.		U/	410.
2-Methylphenol (UG/KG)		U/	420.		U/	410.
4-Methylphenol (UG/KG)	110.	J/	420.		U/	410.
N-Nitroso-di-n-propylamine (UG/KG)		U/	420.		U/	410.
Hexachloroethane (UG/KG)		U/	420.		U/	410.
Nitrobenzene (UG/KG)		U/	420.		U/	410.
Isophorone (UG/KG)		U/	420.		U/	410.
2-Nitrophenol (UG/KG)		U/	420.		U/	410.
2,4-Dimethylphenol (UG/KG)		U/	420.		U/	410.
bis(2-Chloroethoxy)methane (UG/KG)		U/	420.		U/	410.
2,4-Dichlorophenol (UG/KG)		U/	420.		U/	410.
1,2,4-Trichlorobenzene (UG/KG)		U/	420.		U/	410.
Naphthalene (UG/KG)		U/	420.		U/	410.
4-Chloroaniline (UG/KG)		U/	420.		U/	410.
Hexachlorobutadiene (UG/KG)		U/	420.		U/	410.
4-Chloro-3-methylphenol (UG/KG)		U/	420.		U/	410.
2-Methylnaphthalene (UG/KG)		U/	420.		U/	410.
Hexachlorocyclopentadiene (UG/KG)		U/	420.		U/	410.
2,4,6-Trichlorophenol (UG/KG)		U/	420.		U/	410.
2,4,5-Trichlorophenol (UG/KG)		U/	1000.		U/	980.
2-Chloronaphthalene (UG/KG)		U/	420.		U/	410.
2-Nitroaniline (UG/KG)		U/	1000.		U/	980.
Dimethylphthalate (UG/KG)		U/	420.		U/	410.
Acenaphthylene (UG/KG)	140.	J/	420.		U/	410.
2,6-Dinitrotoluene (UG/KG)		U/	420.		U/	410.
3-Nitroaniline (UG/KG)		U/	1000.		U/	980.
Acenaphthene (UG/KG)		U/	420.		U/	410.
2,4-Dinitrophenol (UG/KG)		U/	1000.		U/	980.
4-Nitrophenol (UG/KG)		U/	1000.		U/	980.
Dibenzofuran (UG/KG)		U/	420.		U/	410.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

Parameter	BC-SD01 11/14/95 CONC	LQ/DVQ	RDL	BC-SD02 11/14/95 CONC	LQ/DVQ	RDL	BC-SD03 11/14/95 CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/KG)		U/	380.		U/	380.		U/	450.
Diethylphthalate (UG/KG)		U/	380.		U/	380.		U/	450.
4-Chlorophenyl-phenylether (UG/KG)		U/	380.		U/	380.		U/	450.
Fluorene (UG/KG)		U/	380.		U/	380.		U/	450.
4-Nitroaniline (UG/KG)		U/	910.		U/	930.		U/	1100.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	910.		U/	930.		U/	1100.
4-Bromophenyl-phenylether (UG/KG)		U/	380.		U/	380.		U/	450.
Hexachlorobenzene (UG/KG)		U/	380.		U/	380.		U/	450.
Pentachlorophenol (UG/KG)		U/	910.		U/	930.		U/	1100.
Phenanthrene (UG/KG)		U/	380.		U/	380.		U/	450.
Anthracene (UG/KG)		U/	380.		U/	380.		U/	450.
Di-n-butylphthalate (UG/KG)		U/	380.		U/	380.		U/	450.
Fluoranthene (UG/KG)		U/	380.	52.	J/	380.	54.	J/	450.
Pyrene (UG/KG)		U/	380.	83.	J/	380.	70.	J/	450.
Butylbenzylphthalate (UG/KG)		U/	380.		U/	380.		U/	450.
3,3'-Dichlorobenzidine (UG/KG)		U/	380.		U/	380.		U/	450.
Benzo(a)anthracene (UG/KG)		U/	380.	60.	J/	380.		U/	450.
Chrysene (UG/KG)		U/	380.	60.	J/	380.		U/	450.
Di-n-octyl Phthalate (UG/KG)		U/	380.		U/	380.		U/	450.
Benzo(b)fluoranthene (UG/KG)		U/	380.		U/	380.		U/	450.
Benzo(k)fluoranthene (UG/KG)		U/	380.		U/	380.		U/	450.
Benzo(a)pyrene (UG/KG)		U/	380.	75.	J/	380.		U/	450.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/	380.		U/	380.		U/	450.
Dibenz(a,h)anthracene (UG/KG)		U/	380.		U/	380.		U/	450.
Benzo(g,h,i)perylene (UG/KG)		U/	380.	41.	J/	380.		U/	450.
Carbazole (UG/KG)		U/	380.		U/	380.		U/	450.
N-Nitrosodiphenylamine (UG/KG)		U/	380.		U/	380.		U/	450.
bis(2-Chloroethyl) ether (UG/KG)		U/	380.		U/	380.		U/	450.
bis(2-Chloroisopropyl)ether (UG/KG)		U/	380.		U/	380.		U/	450.
bis(2-ethylhexyl)phthalate (UG/KG)		U/	380.		U/	380.		U/	450.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

	BC-SD04 11/15/95			BC-SD04 Dup 11/15/95			BC-SD05 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/KG)		U/	420.		U/	410.		U/	530.
Diethylphthalate (UG/KG)		U/	420.		U/	410.		U/	530.
4-Chlorophenyl-phenylether (UG/KG)		U/	420.		U/	410.		U/	530.
Fluorene (UG/KG)		U/	420.		U/	410.		U/	530.
4-Nitroaniline (UG/KG)		U/	1000.		U/	1000.		U/	1300.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	1000.		U/	1000.		U/	1300.
4-Bromophenyl-phenylether (UG/KG)		U/	420.		U/	410.		U/	530.
Hexachlorobenzene (UG/KG)		U/	420.		U/	410.		U/	530.
Pentachlorophenol (UG/KG)		U/	1000.		U/	1000.		U/	1300.
Phenanthrene (UG/KG)		U/	420.		U/	410.		U/	530.
Anthracene (UG/KG)		U/	420.		U/	410.		U/	530.
Di-n-butylphthalate (UG/KG)		U/	420.		U/	410.		U/	530.
Fluoranthene (UG/KG)		U/	420.		U/	410.		U/	530.
Pyrene (UG/KG)		U/	420.		U/	410.		U/	530.
Butylbenzylphthalate (UG/KG)		U/	420.		U/	410.		U/	530.
3,3'-Dichlorobenzidine (UG/KG)		U/	420.		U/	410.		U/	530.
Benzo(a)anthracene (UG/KG)		U/	420.		U/	410.		U/	530.
Chrysene (UG/KG)		U/	420.		U/	410.		U/	530.
Di-n-octyl Phthalate (UG/KG)		U/	420.		U/	410.		U/	530.
Benzo(b)fluoranthene (UG/KG)		U/	420.		U/	410.		U/	530.
Benzo(k)fluoranthene (UG/KG)		U/	420.		U/	410.		U/	530.
Benzo(a)pyrene (UG/KG)		U/	420.		U/	410.		U/	530.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/	420.		U/	410.		U/	530.
Dibenz(a,h)anthracene (UG/KG)		U/	420.		U/	410.		U/	530.
Benzo(g,h,i)perylene (UG/KG)		U/	420.		U/	410.		U/	530.
Carbazole (UG/KG)		U/	420.		U/	410.		U/	530.
N-Nitrosodiphenylamine (UG/KG)		U/	420.		U/	410.		U/	530.
bis(2-Chloroethyl) ether (UG/KG)		U/	420.		U/	410.		U/	530.
bis(2-Chloroisopropyl)ether (UG/KG)		U/	420.		U/	410.		U/	530.
bis(2-ethylhexyl)phthalate (UG/KG)		U/	420.		U/	410.		U/	530.

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

Parameter	BC-SD06 11/15/95 CONC	LQ/DVQ	RDL	BC-SD07 11/14/95 CONC	LQ/DVQ	RDL	BC-SD08 11/14/95 CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/KG)		U/	430.		U/	13000.		U/	410.
Diethylphthalate (UG/KG)		U/	430.		U/	13000.		U/	410.
4-Chlorophenyl-phenylether (UG/KG)		U/	430.		U/	13000.		U/	410.
Fluorene (UG/KG)		U/	430.	27000.	/	13000.		U/	410.
4-Nitroaniline (UG/KG)		U/	1000.		U/	33000.		U/	1000.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	1000.		U/	33000.		U/	1000.
4-Bromophenyl-phenylether (UG/KG)		U/	430.		U/	13000.		U/	410.
Hexachlorobenzene (UG/KG)		U/	430.		U/	13000.		U/	410.
Pentachlorophenol (UG/KG)		U/	1000.		U/	33000.		U/	1000.
Phenanthrene (UG/KG)		U/	430.	100000.	/	13000.		U/	410.
Anthracene (UG/KG)		U/	430.	42000.	/	13000.		U/	410.
Di-n-butylphthalate (UG/KG)	310.	J/	430.		U/	13000.		U/	410.
Fluoranthene (UG/KG)		U/	430.	64000.	/	13000.		U/	410.
Pyrene (UG/KG)		U/	430.	84000.	/	13000.		U/	410.
Butylbenzylphthalate (UG/KG)		U/	430.		U/	13000.		U/	410.
3,3'-Dichlorobenzidine (UG/KG)		U/	430.		U/	13000.		U/	410.
Benzo(a)anthracene (UG/KG)		U/	430.	38000.	/	13000.		U/	410.
Chrysene (UG/KG)		U/	430.	35000.	/	13000.		U/	410.
Di-n-octyl Phthalate (UG/KG)		U/	430.		U/	13000.		U/	410.
Benzo(b)fluoranthene (UG/KG)		U/	430.	20000.	/	13000.		U/	410.
Benzo(k)fluoranthene (UG/KG)		U/	430.	17000.	/	13000.		U/	410.
Benzo(a)pyrene (UG/KG)		U/	430.	30000.	/	13000.		U/	410.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/	430.	10000.	J/	13000.		U/	410.
Dibenz(a,h)anthracene (UG/KG)		U/	430.	5600.	J/	13000.		U/	410.
Benzo(g,h,i)perylene (UG/KG)		U/	430.	12000.	J/	13000.		U/	410.
Carbazole (UG/KG)		U/	430.		U/	13000.		U/	410.
N-Nitrosodiphenylamine (UG/KG)		U/	430.		U/	13000.		U/	410.
bis(2-Chloroethyl) ether (UG/KG)		U/	430.		U/	13000.		U/	410.
bis(2-Chloroisopropyl)ether (UG/KG)		U/	430.		U/	13000.		U/	410.
bis(2-ethylhexyl)phthalate (UG/KG)		U/	430.		U/	13000.		U/	410.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: SVOC

Parameter	BC-SD09 11/14/95 CONC	LQ/DVQ	RDL	BC-SD10 11/14/95 CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/KG)		U/	420.		U/	410.
Diethylphthalate (UG/KG)		U/	420.		U/	410.
4-Chlorophenyl-phenylether (UG/KG)		U/	420.		U/	410.
Fluorene (UG/KG)	46.	J/	420.		U/	410.
4-Nitroaniline (UG/KG)		U/	1000.		U/	980.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	1000.		U/	980.
4-Bromophenyl-phenylether (UG/KG)		U/	420.		U/	410.
Hexachlorobenzene (UG/KG)		U/	420.		U/	410.
Pentachlorophenol (UG/KG)		U/	1000.		U/	980.
Phenanthrene (UG/KG)	280.	J/	420.		U/	410.
Anthracene (UG/KG)	230.	J/	420.		U/	410.
Di-n-butylphthalate (UG/KG)		U/	420.		U/	410.
Fluoranthene (UG/KG)	840.	/	420.	55.	J/	410.
Pyrene (UG/KG)	1100.	/	420.	89.	J/	410.
Butylbenzylphthalate (UG/KG)		U/	420.		U/	410.
3,3'-Dichlorobenzidine (UG/KG)		U/	420.		U/	410.
Benzo(a)anthracene (UG/KG)	500.	/	420.		U/	410.
Chrysene (UG/KG)	490.	/	420.		U/	410.
Di-n-octyl Phthalate (UG/KG)		U/	420.		U/	410.
Benzo(b)fluoranthene (UG/KG)	230.	J/	420.		U/	410.
Benzo(k)fluoranthene (UG/KG)	360.	J/	420.		U/	410.
Benzo(a)pyrene (UG/KG)	460.	/	420.		U/	410.
Indeno(1,2,3-cd)pyrene (UG/KG)	180.	J/	420.		U/	410.
Dibenz(a,h)anthracene (UG/KG)	86.	J/	420.		U/	410.
Benzo(g,h,i)perylene (UG/KG)	190.	J/	420.		U/	410.
Carbazole (UG/KG)		U/	420.		U/	410.
N-Nitrosodiphenylamine (UG/KG)		U/	420.		U/	410.
bis(2-Chloroethyl) ether (UG/KG)		U/	420.		U/	410.
bis(2-Chloroisopropyl)ether (UG/KG)		U/	420.		U/	410.
bis(2-ethylhexyl)phthalate (UG/KG)		U/	420.		U/	410.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: PPCB
Generated by: JAH
Date Issued: 20-MAR-96

	BC-SD01 11/14/95			BC-SD02 11/14/95			BC-SD03 11/14/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	1.9		U/	2.		U/	2.3
beta-BHC (UG/KG)		U/	1.9		U/	2.		U/	2.3
delta-BHC (UG/KG)		U/	1.9		U/	2.		U/	2.3
gamma-BHC (Lindane) (UG/KG)		U/	1.9		U/	2.		U/	2.3
Heptachlor (UG/KG)		U/	1.9		U/	2.		U/	2.3
Aldrin (UG/KG)		U/	1.9		U/	2.		U/	2.3
Heptachlor epoxide (UG/KG)		U/	1.9		U/	2.		U/	2.3
Endosulfan I (UG/KG)		U/	1.9		U/	2.		U/	2.3
Dieldrin (UG/KG)		U/	3.8		U/	3.8		U/	4.5
4,4'-DDE (UG/KG)		U/	3.8		U/	3.8		U/	4.5
Endrin (UG/KG)		U/	3.8		U/	3.8		U/	4.5
Endosulfan II (UG/KG)		U/	3.8		U/	3.8		U/	4.5
4,4'-DDD (UG/KG)		U/	3.8		U/	3.8		U/	4.5
Endosulfan sulfate (UG/KG)		U/	3.8		U/	3.8		U/	4.5
4,4'-DDT (UG/KG)		U/	3.8		U/	3.8		U/	4.5
Methoxychlor (UG/KG)		U/	19.		U/	20.		U/	23.
Endrin ketone (UG/KG)		U/	3.8		U/	3.8		U/	4.5
alpha-Chlordane (UG/KG)		U/	1.9		U/	2.		U/	2.3
gamma-Chlordane (UG/KG)		U/	1.9		U/	2.		U/	2.3
Toxaphene (UG/KG)		U/	190.		U/	200.		U/	230.
Aroclor-1016 (UG/KG)		U/	38.		U/	38.		U/	45.
Aroclor-1221 (UG/KG)		U/	76.		U/	77.		U/	91.
Aroclor-1232 (UG/KG)		U/	38.		U/	38.		U/	45.
Aroclor-1242 (UG/KG)		U/	38.		U/	38.		U/	45.
Aroclor-1248 (UG/KG)		U/	38.		U/	38.		U/	45.
Aroclor-1254 (UG/KG)		U/	38.		U/	38.		U/	45.
Aroclor-1260 (UG/KG)		U/	38.		U/	38.		U/	45.
Endrin aldehyde (UG/KG)		U/	3.8		U/	3.8		U/	4.5

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: PPCB

	BC-SD04 11/15/95			BC-SD04 Dup 11/15/95			BC-SD05 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	2.2		U/	2.1		U/	2.7
beta-BHC (UG/KG)		U/	2.2		U/	2.1		U/	2.7
delta-BHC (UG/KG)		U/	2.2		U/	2.1		U/	2.7
gamma-BHC (Lindane) (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Heptachlor (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Aldrin (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Heptachlor epoxide (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Endosulfan I (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Dieldrin (UG/KG)		U/	4.2		U/	4.1		U/	5.3
4,4'-DDE (UG/KG)		U/	4.2		U/	4.1		U/	5.3
Endrin (UG/KG)		U/	4.2		U/	4.1		U/	5.3
Endosulfan II (UG/KG)		U/	4.2		U/	4.1		U/	5.3
4,4'-DDD (UG/KG)		U/	4.2		U/	4.1		U/	5.3
Endosulfan sulfate (UG/KG)		U/	4.2		U/	4.1		U/	5.3
4,4'-DDT (UG/KG)		U/	4.2		U/	4.1		U/	5.3
Methoxychlor (UG/KG)		U/	22.		U/	21.		U/	27.
Endrin ketone (UG/KG)		U/	4.2		U/	4.1		U/	5.3
alpha-Chlordane (UG/KG)		U/	2.2		U/	2.1		U/	2.7
gamma-Chlordane (UG/KG)		U/	2.2		U/	2.1		U/	2.7
Toxaphene (UG/KG)		U/	220.		U/	210.		U/	270.
Aroclor-1016 (UG/KG)		U/	42.		U/	41.		U/	53.
Aroclor-1221 (UG/KG)		U/	85.		U/	84.		U/	110.
Aroclor-1232 (UG/KG)		U/	42.		U/	41.		U/	53.
Aroclor-1242 (UG/KG)		U/	42.		U/	41.		U/	53.
Aroclor-1248 (UG/KG)		U/	42.		U/	41.		U/	53.
Aroclor-1254 (UG/KG)		U/	42.		U/	41.		U/	53.
Aroclor-1260 (UG/KG)		U/	42.		U/	41.		U/	53.
Endrin aldehyde (UG/KG)		U/	4.2		U/	4.1		U/	5.3

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: PPCB

Parameter	BC-SD06 11/15/95 CONC	LQ/DVQ	RDL	BC-SD07 11/14/95 CONC	LQ/DVQ	RDL	BC-SD08 11/14/95 CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	2.2		U/	6.9		U/	2.2
beta-BHC (UG/KG)		U/	2.2		U/	6.9		U/	2.2
delta-BHC (UG/KG)		U/	2.2		U/	6.9		U/	2.2
gamma-BHC (Lindane) (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Heptachlor (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Aldrin (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Heptachlor epoxide (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Endosulfan I (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Dieldrin (UG/KG)		U/	4.3		U/	13.		U/	4.2
4,4'-DDE (UG/KG)		U/	4.3		U/	13.		U/	4.2
Endrin (UG/KG)		U/	4.3		U/	13.		U/	4.2
Endosulfan II (UG/KG)		U/	4.3		U/	13.		U/	4.2
4,4'-DDD (UG/KG)		U/	4.3		U/	13.		U/	4.2
Endosulfan sulfate (UG/KG)		U/	4.3		U/	13.		U/	4.2
4,4'-DDT (UG/KG)		U/	4.3		U/	13.		U/	4.2
Methoxychlor (UG/KG)		U/	22.		U/	69.		U/	22.
Endrin ketone (UG/KG)		U/	4.3		U/	13.		U/	4.2
alpha-Chlordane (UG/KG)		U/	2.2		U/	6.9		U/	2.2
gamma-Chlordane (UG/KG)		U/	2.2		U/	6.9		U/	2.2
Toxaphene (UG/KG)		U/	220.		U/	690.		U/	220.
Aroclor-1016 (UG/KG)		U/	43.		U/	130.		U/	42.
Aroclor-1221 (UG/KG)		U/	88.		U/	270.		U/	86.
Aroclor-1232 (UG/KG)		U/	43.		U/	130.		U/	42.
Aroclor-1242 (UG/KG)		U/	43.		U/	130.		U/	42.
Aroclor-1248 (UG/KG)		U/	43.		U/	130.		U/	42.
Aroclor-1254 (UG/KG)		U/	43.		U/	130.		U/	42.
Aroclor-1260 (UG/KG)		U/	43.		U/	130.		U/	42.
Endrin aldehyde (UG/KG)		U/	4.3		U/	13.		U/	4.2

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: PPCB

Parameter	BC-SD09 11/14/95 CONC	LQ/DVQ	RDL	BC-SD10 11/14/95 CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	2.2		U/	2.1
beta-BHC (UG/KG)		U/	2.2		U/	2.1
delta-BHC (UG/KG)		U/	2.2		U/	2.1
gamma-BHC (Lindane) (UG/KG)		U/	2.2		U/	2.1
Heptachlor (UG/KG)		U/	2.2		U/	2.1
Aldrin (UG/KG)		U/	2.2		U/	2.1
Heptachlor epoxide (UG/KG)		U/	2.2		U/	2.1
Endosulfan I (UG/KG)		U/	2.2		U/	2.1
Dieldrin (UG/KG)		U/	4.2		U/	4.1
4,4'-DDE (UG/KG)		U/	4.2		U/	4.1
Endrin (UG/KG)		U/	4.2		U/	4.1
Endosulfan II (UG/KG)		U/	4.2		U/	4.1
4,4'-DDD (UG/KG)		U/	4.2		U/	4.1
Endosulfan sulfate (UG/KG)		U/	4.2		U/	4.1
4,4'-DDT (UG/KG)		U/	4.2		U/	4.1
Methoxychlor (UG/KG)		U/	22.		U/	21.
Endrin ketone (UG/KG)		U/	4.2		U/	4.1
alpha-Chlordane (UG/KG)		U/	2.2		U/	2.1
gamma-Chlordane (UG/KG)		U/	2.2		U/	2.1
Toxaphene (UG/KG)		U/	220.		U/	210.
Aroclor-1016 (UG/KG)		U/	42.		U/	41.
Aroclor-1221 (UG/KG)		U/	86.		U/	82.
Aroclor-1232 (UG/KG)		U/	42.		U/	41.
Aroclor-1242 (UG/KG)		U/	42.		U/	41.
Aroclor-1248 (UG/KG)		U/	42.		U/	41.
Aroclor-1254 (UG/KG)		U/	42.		U/	41.
Aroclor-1260 (UG/KG)		U/	42.		U/	41.
Endrin aldehyde (UG/KG)		U/	4.2		U/	4.1

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: MTL SLIND
Generated by: JAH
Date Issued: 04-APR-96

	BC-SD01 11/14/95			BC-SD02 11/14/95			BC-SD03 11/14/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (MG/KG)	2130.	/J	11.5	3170.	/J	11.4	4550.	/J	13.6
Antimony (MG/KG)		UN/UJ	11.3		UN/UJ	11.4		UN/UJ	13.6
Arsenic (MG/KG)	0.73	K/	0.11	1.5	/	0.11	1.1	K/	0.14
Barium (MG/KG)	8.4	K/	2.3	11.9	K/	2.3	81.8	/	2.7
Beryllium (MG/KG)		U/	1.1		U/	1.1		U/	1.3
Cadmium (MG/KG)		U/	1.1		U/	1.1	1.6	/	1.4
Calcium (MG/KG)	83600.	N/J	230.	68000.	N/J	229.	75700.	N/J	272.
Chromium, total (MG/KG)	4.3	/	2.3	5.3	/	2.3	7.8	/	2.7
Cobalt (MG/KG)	2.9	K/	2.3	4.1	K/	2.3	4.6	K/	2.7
Copper (MG/KG)	3.4	K/	2.3	7.8	/	2.3	3.8	K/	2.7
Iron (MG/KG)	4320.	N/J	23.	6110.	N/J	22.9	8890.	N/J	27.2
Lead (MG/KG)	2.8	*/J	0.17	3.5	*/J	0.17	4.6	*/J	0.2
Magnesium (MG/KG)	43400.	/	230.	30600.	/	229.	15100.	/	272.
Manganese (MG/KG)	199.	/	2.3	157.	/	2.3	414.	/	2.7
Mercury (MG/KG)	0.05	/	0.05	0.05	/	0.05	0.06	/	0.05
Nickel (MG/KG)		U/	4.5	5.5	K/	4.6	8.1	K/	5.4
Potassium (MG/KG)	439.	K/	23.	533.	K/	22.9	441.	K/	27.2
Selenium (MG/KG)		U/	0.22		U/	0.22		U/	0.27
Silver (MG/KG)		U/	2.3		U/	2.3		U/	2.7
Sodium (MG/KG)		U/	453.		U/	458.		U/	538.
Thallium (MG/KG)		U/	0.11	0.15	K/	0.11	0.16	K/	0.16
Vanadium (MG/KG)		U/	11.3		U/	11.4		U/	13.4
Zinc (MG/KG)	12.7	/	2.3	20.6	/	2.6	29.6	/	2.7
Cyanide (MG/KG)		U/	1.4		U/	1.4		U/	1.6
Total Solids (PERCENT)	87.1	/		87.4	/		73.6	/	
pH (SU)	7.4	/		7.45	/		7.48	/	

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: MTL SLIND

Parameter	BC-SD04 11/15/95 CONC	LQ/DVQ	RDL	BC-SD04 Dup 11/15/95 CONC	LQ/DVQ	RDL	BC-SD05 11/15/95 CONC	LQ/DVQ	RDL
Aluminum (MG/KG)	5710.	/J	12.8	5560.	/J	12.5	9480.	/J	14.8
Antimony (MG/KG)		UN/UJ	12.8		UN/UJ	12.2		UN/UJ	14.8
Arsenic (MG/KG)	1.4	/	0.13	1.1	K/	0.13	1.6	/	0.15
Barium (MG/KG)	54.9	/	2.6	52.8	/	2.5	166.	/	3.
Beryllium (MG/KG)		U/	1.3		U/	1.2		U/	1.5
Cadmium (MG/KG)	1.3	/	1.3	2.2	/	1.2	3.	/	1.5
Calcium (MG/KG)	1900.	N/J	258.	1760.	N/J	251.	5350.	N/J	300.
Chromium, total (MG/KG)	7.9	/	2.6	7.3	/	2.5	14.5	/	3.
Cobalt (MG/KG)	4.6	K/	2.6	3.9	K/	2.5	8.6	K/	3.
Copper (MG/KG)	6.6	/	2.6	5.9	K/	2.5	13.9	/	3.
Iron (MG/KG)	10900.	N/J	25.8	11000.	N/J	25.1	13600.	N/J	30.
Lead (MG/KG)	5.	*/J	0.19	4.1	*/J	0.19	11.5	*/J	0.22
Magnesium (MG/KG)	2050.	/	258.	1930.	/	251.	2690.	/	300.
Manganese (MG/KG)	128.	/	2.6	123.	/	2.5	728.	/	3.
Mercury (MG/KG)	0.05	/	0.05	0.06	/	0.05	0.06	/	0.05
Nickel (MG/KG)	11.2	/	5.2	8.6	K/	5.	12.2	/	6.
Potassium (MG/KG)	439.	K/	25.8	428.	K/	25.1	658.	K/	30.
Selenium (MG/KG)		U/	0.24		U/	0.24	0.54	K/	0.3
Silver (MG/KG)		U/	2.6		U/	2.4		U/	3.
Sodium (MG/KG)		U/	511.		U/	489.		U/	593.
Thallium (MG/KG)	0.18	/	0.18	0.18	K/	0.18	0.25	K/	0.15
Vanadium (MG/KG)	14.8	/	12.9	14.9	/	12.5	16.6	/	15.
Zinc (MG/KG)	32.4	/	2.6	31.	/	2.5	80.9	/	3.
Cyanide (MG/KG)		U/	1.6		U/	1.5		U/	1.8
Total Solids (PERCENT)	77.4	/		79.8	/		66.7	/	
pH (SU)	7.32	/					6.73	/	

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: MTL SLIND

Parameter	BC-SD06 11/15/95 CONC	LQ/DVQ	RDL	BC-SD07 11/14/95 CONC	LQ/DVQ	RDL	BC-SD08 11/14/95 CONC	LQ/DVQ	RDL
Aluminum (MG/KG)	10600.	/J	12.8	7570.	/	24.7	1150.	/J	13.5
Antimony (MG/KG)		UN/UJ	12.8		UN/UJ	24.7		UN/UJ	12.7
Arsenic (MG/KG)	1.7	/	0.13	7.3	/	0.25	0.76	K/	0.14
Barium (MG/KG)	107.	/	2.6	135.	/	5.	6.9	K/	2.7
Beryllium (MG/KG)		U/	1.3		U/	2.5		U/	1.3
Cadmium (MG/KG)	3.9	/	1.3	2.5	/	2.5		U/	1.3
Calcium (MG/KG)	4630.	N/J	264.	72000.	N/	503.	14000.	N/J	271.
Chromium, total (MG/KG)	17.5	/	2.6	13.9	/	5.		U/	2.5
Cobalt (MG/KG)	7.2	K/	2.6	6.4	K/	5.		U/	2.5
Copper (MG/KG)	8.2	/	2.6	40.6	/	5.		U/	2.5
Iron (MG/KG)	20000.	N/J	26.4	12600.	N/J	50.3	3430.	N/J	27.1
Lead (MG/KG)	8.	*/J	0.2	94.	*/J	0.38	1.6	*/J	0.2
Magnesium (MG/KG)	3780.	/	264.	13900.	/	503.	7950.	/	271.
Manganese (MG/KG)	594.	/	2.6	392.	/	392.	53.5	/	2.7
Mercury (MG/KG)		U/	0.05	4.1	/	0.1	0.05	/	0.05
Nickel (MG/KG)	12.8	/	5.3	18.8	K/	10.1		U/	5.1
Potassium (MG/KG)	722.	K/	26.4	841.	K/	50.3	150.	K/	27.1
Selenium (MG/KG)		U/	0.24	0.85	KS/	0.5		US/	0.23
Silver (MG/KG)		U/	2.6		U/	4.9		U/	2.5
Sodium (MG/KG)		U/	514.		U/	990.		U/	509.
Thallium (MG/KG)	0.24	K/	0.13	0.44	K/	0.25		U/	0.12
Vanadium (MG/KG)	22.1	/	13.2		U/	24.7		U/	12.7
Zinc (MG/KG)	48.	/	2.6	156.	/	5.	7.6	/	2.5
Cyanide (MG/KG)		U/	1.6		U/	3.1		U/	1.7
Total Solids (PERCENT)	75.8	/		39.8	/		73.9	/	
pH (SU)	7.08	/		6.96	/		7.24	/	

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SD Type: MTL SLIND

Parameter	BC-SD09 11/14/95 CONC	LQ/DVQ	RDL	BC-SD10 11/14/95 CONC	LQ/DVQ	RDL
Aluminum (MG/KG)	3850.	/J	12.	1880.	/J	12.2
Antimony (MG/KG)		UN/UJ	11.6		UN/UJ	12.1
Arsenic (MG/KG)	2.1	/	0.12	0.48	K/	0.12
Barium (MG/KG)	25.	K/	2.4	8.7	K/	2.4
Beryllium (MG/KG)		U/	1.2		U/	1.2
Cadmium (MG/KG)	1.2	/	1.2		U/	1.2
Calcium (MG/KG)	34000.	N/J	240.	39000.	N/J	244.
Chromium, total (MG/KG)	7.2	/	2.4	3.6	/	2.4
Cobalt (MG/KG)	3.7	K/	2.4		U/	2.4
Copper (MG/KG)	7.	/	2.4		U/	2.4
Iron (MG/KG)	7140.	N/J	24.	3520.	N/J	24.4
Lead (MG/KG)	8.8	*/J	0.18	3.5	*/J	0.18
Magnesium (MG/KG)	19000.	/	240.	19200.	/	244.
Manganese (MG/KG)	153.	/	2.4	88.3	/	2.4
Mercury (MG/KG)		U/	0.05	0.07	/	0.05
Nickel (MG/KG)	7.2	K/	4.8		U/	4.9
Potassium (MG/KG)	399.	K/	24.	243.	K/	24.4
Selenium (MG/KG)		US/	0.23		US/	0.23
Silver (MG/KG)		U/	2.3		U/	2.4
Sodium (MG/KG)		U/	464.		U/	485.
Thallium (MG/KG)	0.15	K/	0.12		U/	0.12
Vanadium (MG/KG)	13.9	/	12.		U/	12.1
Zinc (MG/KG)	23.9	/	2.4	13.6	/	2.4
Cyanide (MG/KG)		U/	1.4		U/	1.4
Total Solids (PERCENT)	83.3	/		82.1	/	
pH (SU)	7.69	/		7.69	/	

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

H5

SURFACE WATER ANALYTICAL RESULTS

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: VOC
Generated by: JAH
Date Issued: 20-MAR-96

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95			BC-SWTB01-03 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: SVOC
Generated by: JAH
Date Issued: 20-MAR-96

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)		U/	10.		U/R	10.
2-Chlorophenol (UG/L)		U/	10.		U/R	10.
1,3-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
1,4-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
1,2-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
2-Methylphenol (UG/L)		U/	10.		U/R	10.
4-Methylphenol (UG/L)		U/	10.		U/R	10.
N-Nitroso-di-n-propylamine (UG/L)		U/	10.		U/R	10.
Hexachloroethane (UG/L)		U/	10.		U/R	10.
Nitrobenzene (UG/L)		U/	10.		U/R	10.
Isophorone (UG/L)		U/	10.		U/R	10.
2-Nitrophenol (UG/L)		U/	10.		U/R	10.
2,4-Dimethylphenol (UG/L)		U/	10.		U/R	10.
bis(2-Chloroethoxy)methane (UG/L)		U/	10.		U/R	10.
2,4-Dichlorophenol (UG/L)		U/	10.		U/R	10.
1,2,4-Trichlorobenzene (UG/L)		U/	10.		U/R	10.
Naphthalene (UG/L)		U/	10.		U/R	10.
4-Chloroaniline (UG/L)		U/	10.		U/R	10.
Hexachlorobutadiene (UG/L)		U/	10.		U/R	10.
4-Chloro-3-methylphenol (UG/L)		U/	10.		U/R	10.
2-Methylnaphthalene (UG/L)		U/	10.		U/R	10.
Hexachlorocyclopentadiene (UG/L)		U/	10.		U/R	10.
2,4,6-Trichlorophenol (UG/L)		U/	10.		U/R	10.
2,4,5-Trichlorophenol (UG/L)		U/	25.		U/R	25.
2-Chloronaphthalene (UG/L)		U/	10.		U/R	10.
2-Nitroaniline (UG/L)		U/	25.		U/R	25.
Dimethylphthalate (UG/L)		U/	10.		U/R	10.
Acenaphthylene (UG/L)		U/	10.		U/R	10.
2,6-Dinitrotoluene (UG/L)		U/	10.		U/R	10.
3-Nitroaniline (UG/L)		U/	25.		U/R	25.
Acenaphthene (UG/L)		U/	10.		U/R	10.
2,4-Dinitrophenol (UG/L)		U/	25.		U/R	25.
4-Nitrophenol (UG/L)		U/	25.		U/R	25.
Dibenzofuran (UG/L)		U/	10.		U/R	10.

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: SVOC

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/L)		U/	10.		U/R	10.
Diethylphthalate (UG/L)		U/	10.		U/R	10.
4-Chlorophenyl-phenylether (UG/L)		U/	10.		U/R	10.
Fluorene (UG/L)		U/	10.		U/R	10.
4-Nitroaniline (UG/L)		U/	25.		U/R	25.
4,6-Dinitro-2-methylphenol (UG/L)		U/	25.		U/R	25.
4-Bromophenyl-phenylether (UG/L)		U/	10.		U/R	10.
Hexachlorobenzene (UG/L)		U/	10.		U/R	10.
Pentachlorophenol (UG/L)		U/	25.		U/R	25.
Phenanthrene (UG/L)		U/	10.		U/R	10.
Anthracene (UG/L)		U/	10.		U/R	10.
Di-n-butylphthalate (UG/L)		U/	10.		U/R	10.
Fluoranthene (UG/L)		U/	10.		U/R	10.
Pyrene (UG/L)		U/	10.		U/R	10.
Butylbenzylphthalate (UG/L)		U/	10.		U/R	10.
3,3'-Dichlorobenzidine (UG/L)		U/	10.		U/R	10.
Benzo(a)anthracene (UG/L)		U/	10.		U/R	10.
Chrysene (UG/L)		U/	10.		U/R	10.
Di-n-octyl Phthalate (UG/L)		U/	10.		U/R	10.
Benzo(b)fluoranthene (UG/L)		U/	10.		U/R	10.
Benzo(k)fluoranthene (UG/L)		U/	10.		U/R	10.
Benzo(a)pyrene (UG/L)		U/	10.		U/R	10.
Indeno(1,2,3-cd)pyrene (UG/L)		U/	10.		U/R	10.
Dibenz(a,h)anthracene (UG/L)		U/	10.		U/R	10.
Benzo(g,h,i)perylene (UG/L)		U/	10.		U/R	10.
Carbazole (UG/L)		U/	10.		U/R	10.
N-Nitrosodiphenylamine (UG/L)		U/	10.		U/R	10.
bis(2-Chloroethyl) ether (UG/L)		U/	10.		U/R	10.
bis(2-Chloroisopropyl)ether (UG/L)		U/	10.		U/R	10.
bis(2-ethylhexyl)phthalate (UG/L)		U/	10.		U/R	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: SVOC
Generated by: JAH
Date Issued: 20-MAR-96

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)		U/	10.		U/R	10.
2-Chlorophenol (UG/L)		U/	10.		U/R	10.
1,3-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
1,4-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
1,2-Dichlorobenzene (UG/L)		U/	10.		U/R	10.
2-Methylphenol (UG/L)		U/	10.		U/R	10.
4-Methylphenol (UG/L)		U/	10.		U/R	10.
N-Nitroso-di-n-propylamine (UG/L)		U/	10.		U/R	10.
Hexachloroethane (UG/L)		U/	10.		U/R	10.
Nitrobenzene (UG/L)		U/	10.		U/R	10.
Isophorone (UG/L)		U/	10.		U/R	10.
2-Nitrophenol (UG/L)		U/	10.		U/R	10.
2,4-Dimethylphenol (UG/L)		U/	10.		U/R	10.
bis(2-Chloroethoxy)methane (UG/L)		U/	10.		U/R	10.
2,4-Dichlorophenol (UG/L)		U/	10.		U/R	10.
1,2,4-Trichlorobenzene (UG/L)		U/	10.		U/R	10.
Naphthalene (UG/L)		U/	10.		U/R	10.
4-Chloroaniline (UG/L)		U/	10.		U/R	10.
Hexachlorobutadiene (UG/L)		U/	10.		U/R	10.
4-Chloro-3-methylphenol (UG/L)		U/	10.		U/R	10.
2-Methylnaphthalene (UG/L)		U/	10.		U/R	10.
Hexachlorocyclopentadiene (UG/L)		U/	10.		U/R	10.
2,4,6-Trichlorophenol (UG/L)		U/	10.		U/R	10.
2,4,5-Trichlorophenol (UG/L)		U/	25.		U/R	25.
2-Chloronaphthalene (UG/L)		U/	10.		U/R	10.
2-Nitroaniline (UG/L)		U/	25.		U/R	25.
Dimethylphthalate (UG/L)		U/	10.		U/R	10.
Acenaphthylene (UG/L)		U/	10.		U/R	10.
2,6-Dinitrotoluene (UG/L)		U/	10.		U/R	10.
3-Nitroaniline (UG/L)		U/	25.		U/R	25.
Acenaphthene (UG/L)		U/	10.		U/R	10.
2,4-Dinitrophenol (UG/L)		U/	25.		U/R	25.
4-Nitrophenol (UG/L)		U/	25.		U/R	25.
Dibenzofuran (UG/L)		U/	10.		U/R	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: SVOC

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/L)		U/	10.		U/R	10.
Diethylphthalate (UG/L)		U/	10.		U/R	10.
4-Chlorophenyl-phenylether (UG/L)		U/	10.		U/R	10.
Fluorene (UG/L)		U/	10.		U/R	10.
4-Nitroaniline (UG/L)		U/	25.		U/R	25.
4,6-Dinitro-2-methylphenol (UG/L)		U/	25.		U/R	25.
4-Bromophenyl-phenylether (UG/L)		U/	10.		U/R	10.
Hexachlorobenzene (UG/L)		U/	10.		U/R	10.
Pentachlorophenol (UG/L)		U/	25.		U/R	25.
Phenanthrene (UG/L)		U/	10.		U/R	10.
Anthracene (UG/L)		U/	10.		U/R	10.
Di-n-butylphthalate (UG/L)		U/	10.		U/R	10.
Fluoranthene (UG/L)		U/	10.		U/R	10.
Pyrene (UG/L)		U/	10.		U/R	10.
Butylbenzylphthalate (UG/L)		U/	10.		U/R	10.
3,3'-Dichlorobenzidine (UG/L)		U/	10.		U/R	10.
Benzo(a)anthracene (UG/L)		U/	10.		U/R	10.
Chrysene (UG/L)		U/	10.		U/R	10.
Di-n-octyl Phthalate (UG/L)		U/	10.		U/R	10.
Benzo(b)fluoranthene (UG/L)		U/	10.		U/R	10.
Benzo(k)fluoranthene (UG/L)		U/	10.		U/R	10.
Benzo(a)pyrene (UG/L)		U/	10.		U/R	10.
Indeno(1,2,3-cd)pyrene (UG/L)		U/	10.		U/R	10.
Dibenz(a,h)anthracene (UG/L)		U/	10.		U/R	10.
Benzo(g,h,i)perylene (UG/L)		U/	10.		U/R	10.
Carbazole (UG/L)		U/	10.		U/R	10.
N-Nitrosodiphenylamine (UG/L)		U/	10.		U/R	10.
bis(2-Chloroethyl) ether (UG/L)		U/	10.		U/R	10.
bis(2-Chloroisopropyl)ether (UG/L)		U/	10.		U/R	10.
bis(2-ethylhexyl)phthalate (UG/L)		U/	10.		U/R	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: SW Type: PPCB
Generated by: JAH
Date Issued: 20-MAR-96

	BC-SW01-03 11/15/95			BC-SW01-93 11/15/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.1		U/	0.1
beta-BHC (UG/L)		U/	0.1		U/	0.1
delta-BHC (UG/L)		U/	0.1		U/	0.1
gamma-BHC (Lindane) (UG/L)		U/	0.1		U/	0.1
Heptachlor (UG/L)		U/	0.1		U/	0.1
Aldrin (UG/L)		U/	0.1		U/	0.1
Heptachlor epoxide (UG/L)		U/	0.1		U/	0.1
Endosulfan I (UG/L)		U/	0.1		U/	0.1
Dieldrin (UG/L)		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.5		U/	0.5
Endrin ketone (UG/L)		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.1		U/	0.1
gamma-Chlordane (UG/L)		U/	0.1		U/	0.1
Toxaphene (UG/L)		U/	5.		U/	5.
Aroclor-1016 (UG/L)		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.		U/	2.
Aroclor-1232 (UG/L)		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

H6

GROUNDWATER ANALYTICAL RESULTS

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC
Generated by: JAH
Date Issued: 04-APR-96

	BC-GWFB01-03 11/20/95			BC-GWFB02-03 11/21/95			BC-GWFB03-03 11/21/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.	9.	J/	10.	3.	J/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.	3.	J/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.	2.	J/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.	83.	/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWG103D-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWG103S-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWG107-03 11/20/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWG108D-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWG108S-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWTB01-03 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)	2.	J/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW03R-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW05R-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW08R-03 11/20/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.	6.	J/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)	2.	J/	10.	48.	/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.	7.	J/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)	8.	J/	10.	22.	/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW11R-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW13-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW14-03 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier. RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW16R-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW18-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW19-03 11/20/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.	8.	J/	10.	3.	J/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.	27.	/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW19B-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW21-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW21B-03 11/20/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.	2.	J/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.	3.	J/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.	22.	/	10.	30.	/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.	30.	/	10.	9.	J/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.	44.	/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

	BC-GWW21B-93 11/21/95			BC-GWW23-03 11/21/95			BC-GWW23B-03 11/21/95		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	160.		U/	100.
Bromomethane (UG/L)		U/	10.		U/	160.		U/	100.
Vinyl chloride (UG/L)		U/	10.		U/	160.		U/	100.
Chloroethane (UG/L)		U/	10.		U/	160.		U/	100.
Methylene chloride (UG/L)		U/	10.		U/	160.		U/	100.
Acetone (UG/L)		U/	10.		U/	160.		U/	100.
Carbon disulfide (UG/L)		U/	10.		U/	160.		U/	100.
1,1-Dichloroethene (UG/L)	3.	J/	10.		U/	160.		U/	100.
1,1-Dichloroethane (UG/L)		U/	10.		U/	160.		U/	100.
1,2-Dichloroethene (total) (UG/L)	3.	J/	10.		U/	160.	470.	/	100.
Chloroform (UG/L)		U/	10.		U/	160.		U/	100.
1,2-Dichloroethane (UG/L)		U/	10.		U/	160.		U/	100.
2-Butanone (UG/L)		U/	10.		U/	160.		U/	100.
1,1,1-Trichloroethane (UG/L)	23.	/	10.		U/	160.	21.	J/	100.
Carbon tetrachloride (UG/L)		U/	10.		U/	160.		U/	100.
Bromodichloromethane (UG/L)		U/	10.		U/	160.		U/	100.
1,2-Dichloropropane (UG/L)		U/	10.		U/	160.		U/	100.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	160.		U/	100.
Trichloroethene (UG/L)	6.	J/	10.		U/	160.	61.	J/	100.
Dibromochloromethane (UG/L)		U/	10.		U/	160.		U/	100.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	160.		U/	100.
Benzene (UG/L)		U/	10.		U/	160.		U/	100.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	160.		U/	100.
Bromoform (UG/L)		U/	10.		U/	160.		U/	100.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	160.		U/	100.
2-Hexanone (UG/L)		U/	10.		U/	160.		U/	100.
Tetrachloroethene (UG/L)		U/	10.	1600.	/	160.	1600.	/	100.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	160.		U/	100.
Toluene (UG/L)		U/	10.		U/	160.		U/	100.
Chlorobenzene (UG/L)		U/	10.		U/	160.		U/	100.
Ethylbenzene (UG/L)		U/	10.		U/	160.		U/	100.
Styrene (UG/L)		U/	10.		U/	160.		U/	100.
Xylenes (total) (UG/L)		U/	10.		U/	160.		U/	100.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW25C-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW26C-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW29C-03 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)	6.	J/	10.	5.	J/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)	45.	/	10.	33.	/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)	4.	J/	10.	110.	/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)	3.	J/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW31C-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW32-03 11/20/95 CONC	LQ/DVQ	RDL	BC-GWW34-03 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)	6.	J/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)	4.	J/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)	19.	/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)	2.	J/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)	72.	/	10.		U/	10.	12.	/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW38-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW41-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW41-93 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)	6.	J/	10.	9.	J/	10.	9.	J/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)	5.	J/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)	250.	/	10.	31.	/	10.	31.	/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
Beloit Corporation
Rockton, IL

Matrix: GW Type: VOC

Parameter	BC-GWW42-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW44-03 11/21/95 CONC	LQ/DVQ	RDL	BC-GWW44C-93 11/21/95 CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

H7

TOTAL ORGANIC CARBON ANALYTICAL RESULTS

RMT LABORATORIES - 744 HEARTLAND TRAIL - MADISON, WI - 53717-1934 - P.O. BOX 8923 - MADISON, WI - 53708-8923 - 608/831-4444 - 608/831-7530 FAX

PROJECT NAME: MONTGOMERY WATSON
PROJECT NUMBER: 91054.01
WI DNR LAB ID: 113138520

REPORT DATE: 12/17/95

INORGANIC ANALYSIS REPORT

ANALYTE: Total organic carbon

		RESULT	EQL	CODE	UNITS
SAMPLE	8564-001	15000	100		mg/kg dry wt.
STATION ID	12110-012 SD01				
COLLECTION DATE	11/14/95				
SAMPLE	8564-002	5500	100	G,N	mg/kg dry wt.
STATION ID	12110-013 SD02				
COLLECTION DATE	11/14/95				
SAMPLE	8564-003	9700	100		mg/kg dry wt.
STATION ID	12110-014 SD03				
COLLECTION DATE	11/15/95				
SAMPLE	8564-004	5100	100		mg/kg dry wt.
STATION ID	12110-015 SD04				
COLLECTION DATE	11/15/95				
SAMPLE	8564-005	>16000	100	E	mg/kg dry wt.
STATION ID	12110-016 SD05				
COLLECTION DATE	11/15/95				
SAMPLE	8564-006	9600	100		mg/kg dry wt.
STATION ID	12110-017 SD06				
COLLECTION DATE	11/15/95				
SAMPLE	8564-007	>16000	100	E	mg/kg dry wt.
STATION ID	12110-018 SD07				
COLLECTION DATE	11/14/95				
SAMPLE	8564-008	2100	100		mg/kg dry wt.
STATION ID	12110-019 SD08				
COLLECTION DATE	11/14/95				
SAMPLE	8564-009	>16000	100	E	mg/kg dry wt.
STATION ID	12110-020 SD09				
COLLECTION DATE	11/14/95				
SAMPLE	8564-010	4700	100		mg/kg dry wt.
STATION ID	12110-021 SD10				
COLLECTION DATE	11/03/95				

RMT LABORATORIES - 744 HEARTLAND TRAIL - MADISON, WI - 53717-1934 - P.O. BOX 8923 - MADISON, WI - 53708-8923 - 608/831-4444 - 608/831-7530 FAX

PROJECT NAME: MONTGOMERY WATSON
PROJECT NUMBER: 91054.01
WI DNR LAB ID: 113138520

REPORT DATE: 12/17/95

INORGANIC ANALYSIS REPORT

ANALYTE: Total organic carbon

		RESULT	EQL	CODE	UNITS
SAMPLE	8564-011	14000	100		mg/kg dry wt.
STATION ID	12110-022 W44C 59'				
COLLECTION DATE	11/03/95				
SAMPLE	8564-012	12000	100	N	mg/kg dry wt.
STATION ID	12110-023 W29C 69'				
COLLECTION DATE	11/02/95				
SAMPLE	8564-013	>16000	100	E	mg/kg dry wt.
STATION ID	12110-024 W42 30'				
COLLECTION DATE	11/07/95				

Analysis dated 12/12/95.

RMT LABORATORIES - 744 HEARTLAND TRAIL - MADISON, WI - 53717-1934 - P.O. BOX 8923 - MADISON, WI - 53708-8923 - 608/831-4444 - 608/831-7530 FAX

Inorganic Data Qualifier Sheet

E Analyte concentration exceeds the maximum linear quantitation limit of the instrument.

G Unable to determine precision due to matrix interference.

N Spiked sample recovery not within control limits.

H8

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Beloit Corporation
Rockton, IL

Matrix: SD
Generated by: JAH
Date Issued: 21-MAR-96

BC-SD01 11/14/95

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	169.	J/J

BC-SD02 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	418.	J/J
Unknown Alkane (UG/KG)	84.	J/J

BC-SD03 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	5970.	J/J
Total Unknown Alkanes (UG/KG)	580.	J/J
Hexadecanoic Acid (UG/KG)	300.	XNJ/J
Phytol (UG/KG)	420.	NJ/J
Vitamin E (UG/KG)	380.	NJ/J
.gamma.-Sitosterol (UG/KG)	380.	NJ/J

BC-SD04 11/15/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	1370.	J/J
Total Unknowns (UG/KG)	1410.	J/J
Hexadecanoic Acid (UG/KG)	110.	XNJ/J
Total Unknown Alkanes (UG/KG)	96.	J/J
.gamma.-Sitosterol (UG/KG)	280.	J/J

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Beloit Corporation
Rockton, IL

Matrix: SD

BC-SD05 11/15/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	7320.	J/J
Total Unknown Alkanes (UG/KG)	750.	J/J
Hexadecanoic Acid (UG/KG)	230.	J/J
D-Friedoolean-14-ene, 3-meth (UG/KG)	1800.	NJ/J
.gamma.-Sitosterol (UG/KG)	1600.	NJ/J
Stigmast-4-en-3-one (UG/KG)	930.	NJ/J

BC-SD06 11/15/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	5070.	J/J
Total Unknown Alkanes (UG/KG)	200.	J/J
Hexadecanoic Acid (UG/KG)	130.	XNJ/J
.gamma.-Sitosterol (UG/KG)	940.	NJ/J

BC-SD08 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	7610.	J/J
Total Unknown Alkanes (UG/KG)	340.	J/J
.gamma.-Sitosterol (UG/KG)	610.	NJ/J
Olean-12-ene (UG/KG)	220.	NJ/J
Stigmast-4-en-3-one (UG/KG)	360.	NJ/J

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Beloit Corporation
Rockton, IL

Matrix: SD

BC-SD09 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	1430.	J/J
Total Unknown PAHs (UG/KG)	2050.	J/J
Total Unknown Methylated PAHs (UG/KG)	430.	J/J
Hexadecanoic Acid (UG/KG)	190.	XNJ/J
2-Phenylnaphthalene (UG/KG)	220.	NJ/J

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknown Hydrocarbons (UG/KG)	14.	J/J

BC-SD10 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknowns (UG/KG)	442.	J/J
Hexadecanoic Acid (UG/KG)	140.	XNJ/J

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknown Hydrocarbons (UG/KG)	9.	J/J

BD-SD07 11/14/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Total Unknown PAHs (UG/KG)	50000.	J/J
Total Unknown Methylated PAHs (UG/KG)	205000.	J/J
Total Unknown Substituted Naps (UG/KG)	135000.	J/J
Methyl-9H-fluorene Isomer (UG/KG)	48000.	J/J
Methyldibenzothiophene Isomer (UG/KG)	41000.	J/J
Dibenzothiophene (UG/KG)	30000.	NJ/J
2-Phenylnaphthalene (UG/KG)	20000.	NJ/J
Dimethylphenanthrene Isomer (UG/KG)	14000.	J/J

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Beloit Corporation
Rockton, IL

Matrix: SW
Generated by: JAH
Date Issued: 21-MAR-96

BC-SW01-03 11/15/95

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
1,2-Cyclohexanediol Isomer (UG/L)	2.	J/J
2-ethyl-hexanoic acid (UG/L)	4.	NJ/J

I

HYDRAULIC CONDUCTIVITY TESTING RESULTS

I1

BAILDOWN HYDRAULIC CONDUCTIVITY TEST METHODS

BAILDOWN HYDRAULIC CONDUCTIVITY TEST METHODS

The purpose of a baildown test is to measure in-situ saturated hydraulic conductivity of subsurface materials. Baildown tests measure the saturated hydraulic conductivity of undisturbed, in-place aquifer material, whereas laboratory tests require removal of a sample from its natural environment.

The general procedure for conducting a baildown test is to instantaneously change the head in the well and measure the rate at which the water in the well returns to its static level. The change in head in the well must be "instantaneous" relative to the time required for the head to return to static conditions (e.g., <5% of total time). The hydraulic conductivity of the aquifer material is a function of the rate of water level rise and the well geometry. In permeable aquifer material, the location of the well screen with respect to the water table and the base of the aquifer are important. The configuration of a typical baildown test is illustrated in Figure A.

The procedure for changing head in a well depends on the type of well being analyzed. Head can be changed in a water table well or piezometer by physically removing or displacing a volume of water using a bailer or slug bomb. Air pressure can also be used to displace water in a piezometer, provided the well is screened in relatively high permeability material such as sand and gravel.

DATA REDUCTION

Several methods are available to interpret the water level versus time data that are obtained from a baildown test. These include Hvorslev (1951), NAVFAC (1971), Papadopulos, et al. (1973), Bouwer and Rice (1976) and Bouwer (1989). The first three references use an analytical solution of the equation for flow to a well fully penetrating a confined aquifer. The method by Bouwer and Rice (1976) as modified in Bouwer (1989) utilizes an analog model of both fully and partially penetrating wells to aid in solution of the modified Thiem equation. The Bouwer and Rice (1976) method as modified in Bouwer (1989) was selected because of its ability to incorporate the effects on recovery rate due to a partially penetrating well.

The Bouwer and Rice (1976) method is based on solution of a modified Thiem equation for radial flow to a pumped well as shown in Equation 1.

$$Q = 2\pi\ (KLy)/(\ln(R_e/r_w)) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where:

- Q = flow into the well (L^3/T)
- K = hydraulic conductivity of the aquifer (L/T)
- L = open length of open interval in the well L)
- y = difference between the water level in the well and the equilibrium level in the aquifer (L)
- R_e = radius of influence of the well (L)
- r_w = effective well radius (L)

In a single well test, the value of R_e is unknown. Values of R_e, in terms of the $\ln(R_e/r_w)$ were determined by Bouwer and Rice (1976) with an electric analog model of a homogeneous isotropic aquifer. The analog model was used to analyze the effects of the aquifer and well geometry. Results of the study for a partially penetrating well are shown in Equation 2 using Equation 3 to determine the value of $\ln(R_e/r_w)$.

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L} \frac{1}{t} \ln\left(\frac{y_o}{y_t}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where:

- r_c = radius of the well casing (L)
- t = time (T)
- y_o, y_t = difference between the water level in the well and the equilibrium level in the aquifer at times 0 and t

$$\ln(R_e/r_w) = \left[\frac{1.1}{\ln(H/r_w)} + \frac{A + B\ln(D-H)/r_w)}{L/r_w}\right]^{-1} \quad \ldots\ldots (3)$$

Where:

- A,B = constants obtained from Figure B
- H = depth to the bottom of the screen from the water table
- D = thickness of the aquifer

As noted by Bouwer and Rice, a plot of log (y_0/y_t) versus time (t) (on the linear scale) should yield a straight line.

The commercially available software AQTESOLV® (Duffield and Rumbaugh, 1989) was used to reduce the baildown field test data. The software combines statistical parameter estimation methods with graphical curve-matching techniques for analysis of the test data.

In water table wells, recovery of the water level in the well after bailing is affected by the water in the gravel pack. To "subtract" this effect on the test results, two modifications are generally made.

First, as described by Bouwer (1989), the program input parameter "radius of well "casing" is increased to account for the water level rising in the well screen and gravel pack using the following equation:

$$r_s = \sqrt{rc^2 + (r_w^2 - r_c^2)n}$$

Where:

r_s = effective screen radius
r_c = radius of the casing (screen)
r_w = radius of the borehole
n = porosity of the gravel pack (decimal)

Second, where appropriate, the line of log (y_0/y_t) versus time used to calculate hydraulic conductivity is visually matched to data points occurring after effects of gravel pack water on water level recovery have diminished (Figure C).

Together these modifications allow for more accurate estimation of the formation's hydraulic conductivity.

Input data for each test are listed on the following pages. Output from the test analysis follows the input data. Results of the tests are summarized and discussed in the text.

REFERENCES CITED

Bouwer, H. and R.C. Rice. 1976. *A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells,* Water Resources Research, Vol. 12, No. 3, p. 423-428.

Bouwer, H., 1989. *The Bouwer and Rice Slug Test - An Update, Groundwater,* Vol. 27, No. 3, May-June, 1989, pp. 304-309.

Duffield, G.M. and J.O. Rumbaugh, III, *AQTESOLV®, Aquifer Test Solver,* Version 1.00, October 1989.

Hvorslev, M.J. 1951. *Time Lag and Soil Permeability in Groundwater Observations,* U.S. Army Corps of Engineers, Waterways Exp. Sta. Bull. 36, Vicksburg, MS.

Papadopulos, S.S., et. al. 1973. *On the Analysis of 'Slug Test' Data,* Water Resources Research, Vol. 9, No. 4. p. 1087-1089.

United States Department of the Navy. 1971. *Design Manual: Soil Mechanics, Foundations, Earth Structures,* NAVFAK DM-F, March 1971. p. 7-4-9.

KDS/vlr/KJQ/TEM
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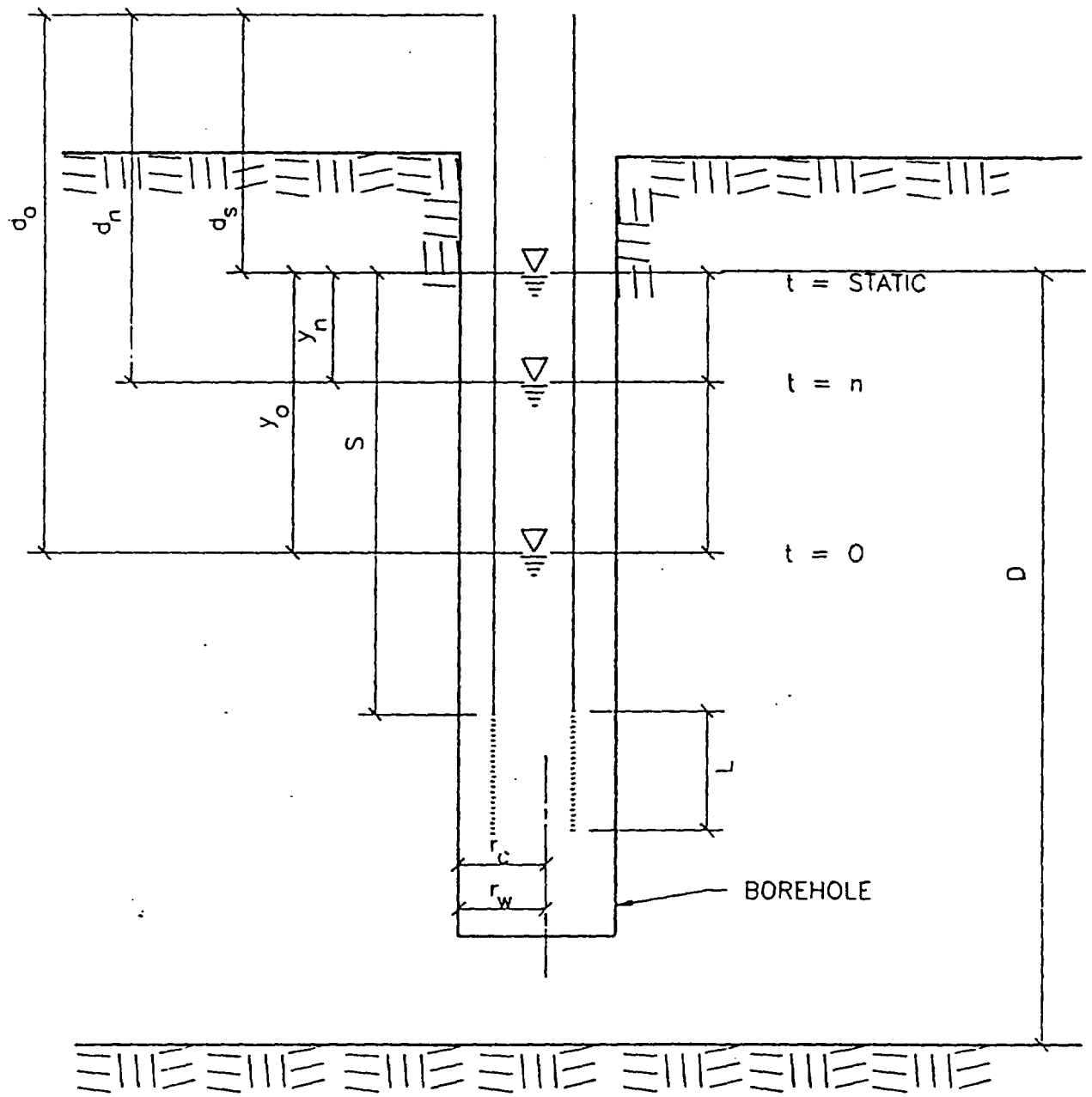


d_s – DEPTH TO STATIC LEVEL

d_o – DEPTH TO WATER AT t=0

d_n – DEPTH TO WATER AT t=n

y_o – RELATIVE DRAWDOWN AT t=0 ($d_o - d_s$)

y_n – RELATIVE DRAWDOWN AT t=n ($d_n - d_s$)

S – DEPTH TO TOP OF SCREEN BELOW WATER TABLE

D – AQUIFER THICKNESS

FIGURE A- BAILDOWN TEST CONFIGURATION

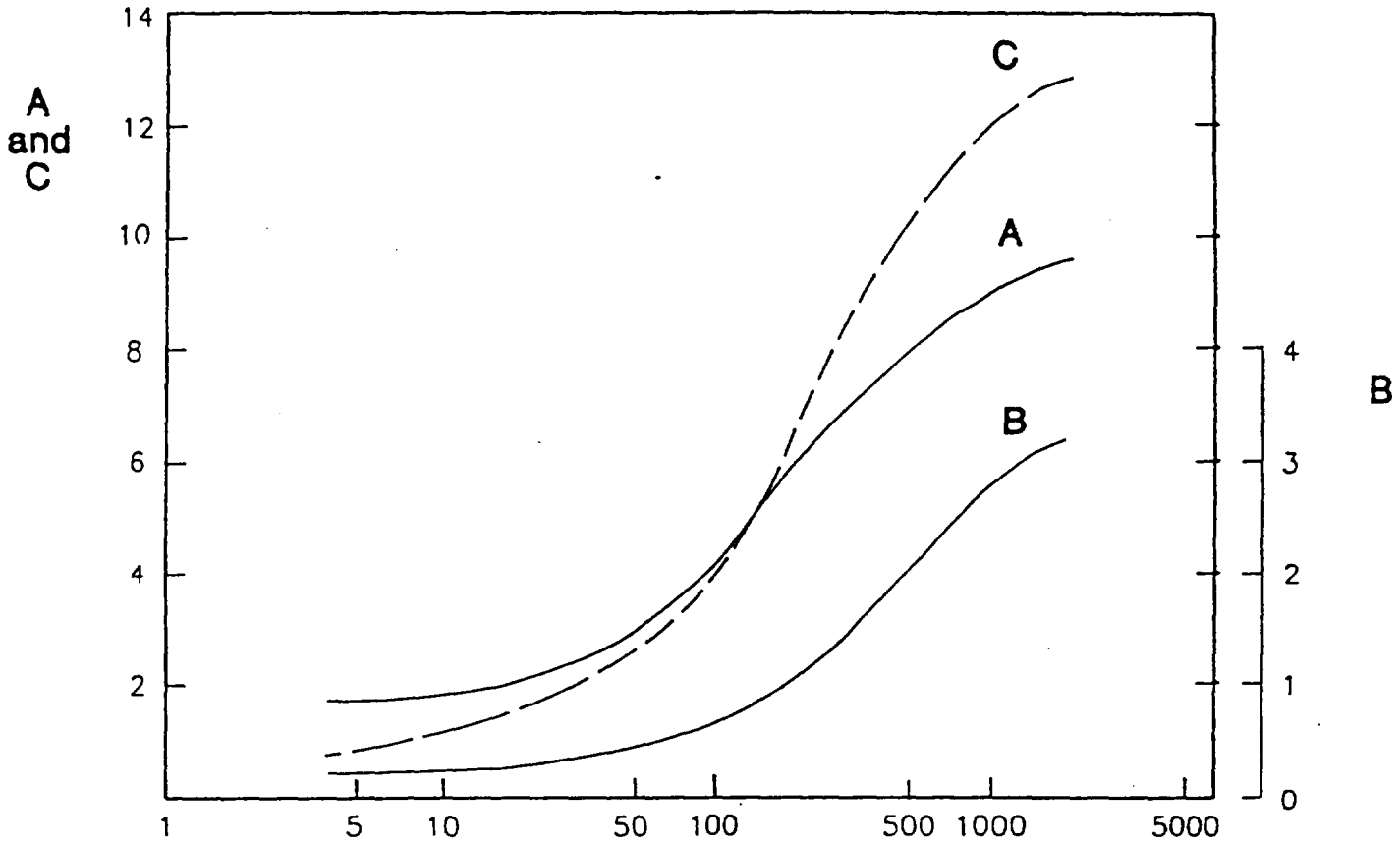


FIGURE B - CURVES RELATING A, B AND C TO L/r_w (FROM BOUWER AND RICE, 1976).

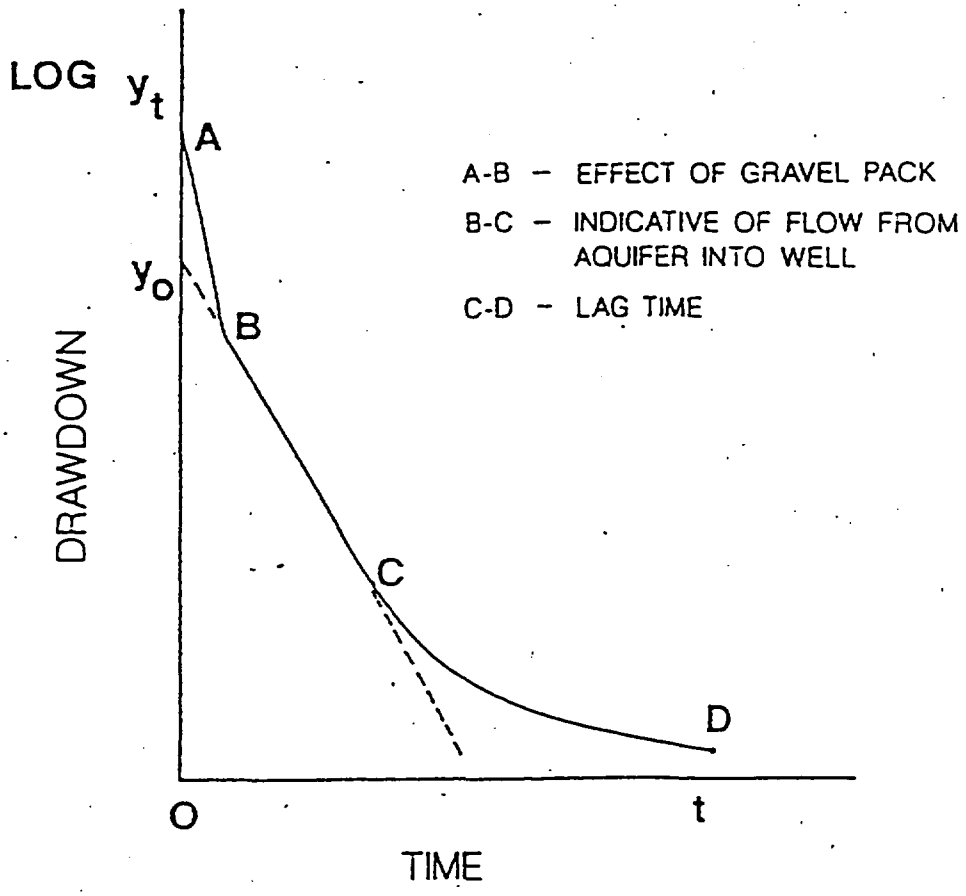


FIGURE C - SCHEMATIC OF DOUBLE STRAIGHT LINE EFFECT CAUSED BY HIGH PERMEABILITY OF GRAVEL PACK AROUND THE WELL. (AFTER BOUWER, 1989)

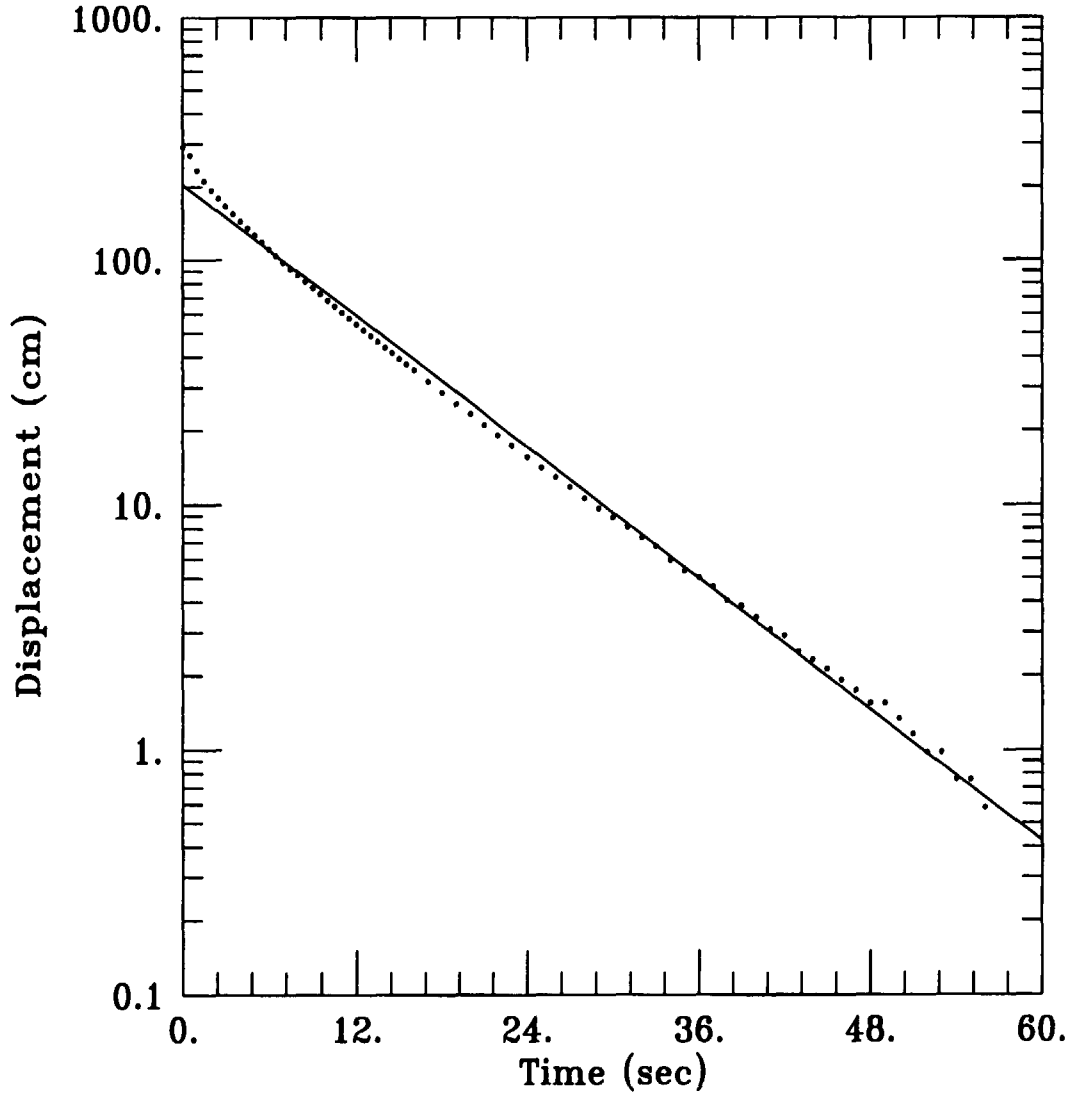
I2

OUTPUT FROM AQTESOLV® BAILDOWN ANALYSIS PROGRAM

Client: Beloit Corporation | Company: Montgomery Watson

Location: Blackhawk Facility

W29C



DATA SET:
W29C.IN
03/28/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0 = 290.6 cm
rc = 2.5 cm
rw = 7.6 cm
L = 152.4 cm
b = 475.5 cm
H = 45.1 cm

PARAMETER ESTIMATES:
K = 0.002662 cm/sec
y0 = 203.7 cm

AQTESOLV

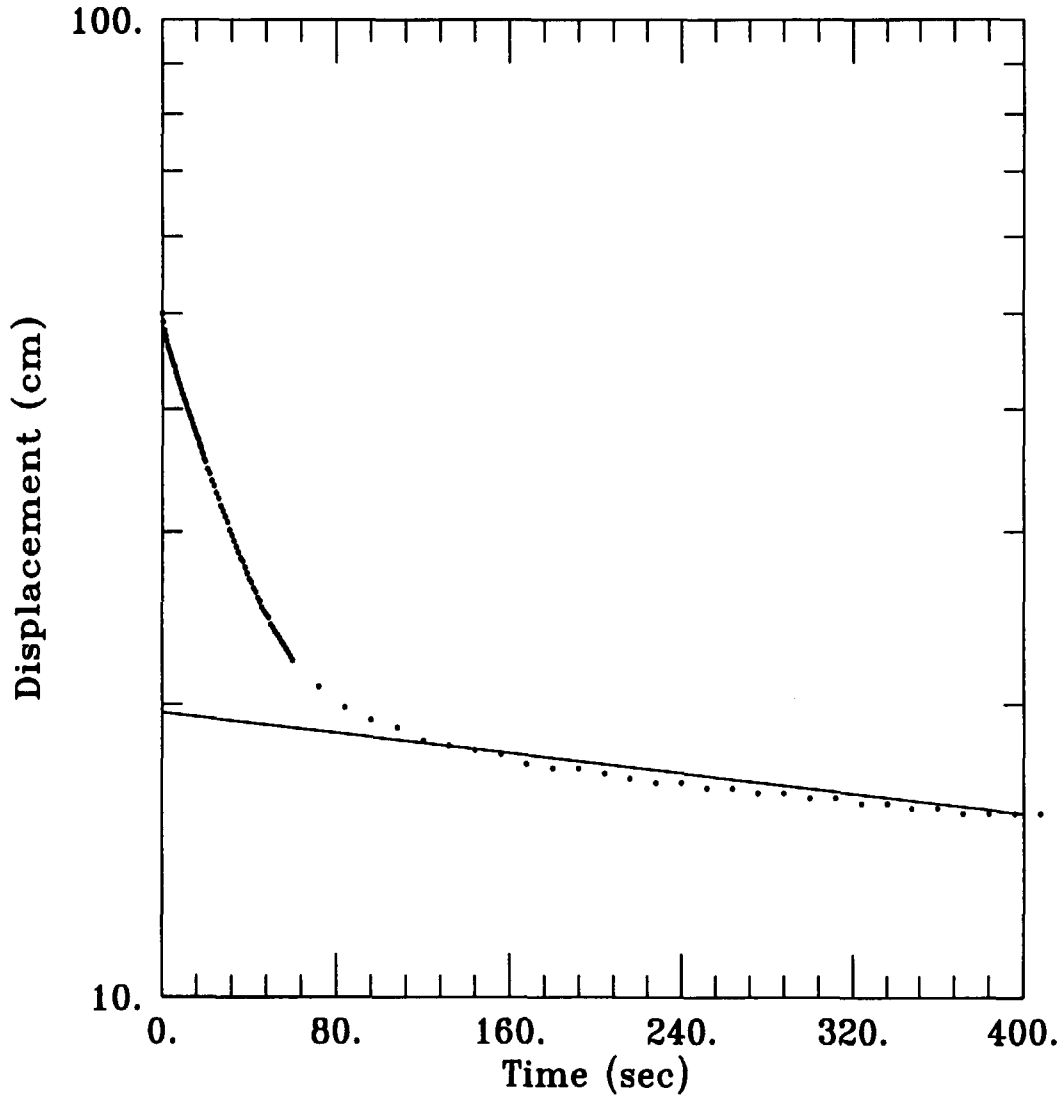
W29C
SlugT1
290.6
2.5
7.6
SlugT2
475.5
152.4
45.1
TSdata

0.001	290.57	1
0.5	268.71	1
1	232.59	1
1.5	209.98	1
2	192.79	1
2.5	178.31	1
3	165.75	1
3.5	154.14	1
4	144.11	1
4.5	134.81	1
5	126.34	1
5.5	118.41	1
6	110.86	1
6.5	104.12	1
7	97.72	1
7.5	91.93	1
8	86.53	1
8.5	81.5	1
9	76.66	1
9.5	72.42	1
10	68.18	1
10.5	64.5	1
11	60.84	1
11.5	57.55	1
12	54.44	1
12.5	51.54	1
13	48.86	1
13.5	46.15	1
14	43.65	1
14.5	41.51	1
15	39.2	1
15.5	37.25	1
16	35.33	1
17	31.67	1
18	28.56	1
19	25.66	1
20	23.35	1
21	21.03	1
22	19.11	1

23	17.37	1
24	15.64	1
25	14.11	1
26	12.95	1
27	11.8	1
28	10.64	1
29	9.66	1
30	8.9	1
31	8.11	1
32	7.35	1
33	6.77	1
34	5.97	1
35	5.39	1
36	5.03	1
37	4.63	1
38	4.05	1
39	3.87	1
40	3.47	1
41	3.08	1
42	2.9	1
43	2.5	1
44	2.32	1
45	2.13	1
46	1.92	1
47	1.74	1
48	1.55	1
49	1.55	1
50	1.34	1
51	1.16	1
52	0.98	1
53	0.98	1
54	0.76	1
55	0.76	1
56	0.58	1

Client: Beloit Corporation	Company: Montgomery Watson
Location: Blackhawk Facility	

W42



DATA SET:
W42.IN
03/28/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0 = 50. cm
rc = 4.7 cm
rw = 7.6 cm
L = 149.4 cm
b = 149.4 cm
H = 149.4 cm

PARAMETER ESTIMATES:
K = 9.758E-05 cm/sec
y0 = 19.61 cm

W42
SlugT1
50
4.7
7.6
SlugT2
149.4
149.4
149.4
TSdata

0.001	50.02	1
0.5	49.07	1
1	48.1	1
1.5	47.52	1
2	46.94	1
2.5	46.36	1
3	45.96	1
3.5	45.57	1
4	45.2	1
4.5	44.81	1
5	44.41	1
5.5	44.23	1
6	43.65	1
6.5	43.25	1
7	42.89	1
7.5	42.49	1
8	42.31	1
8.5	41.91	1
9	41.51	1
9.5	41.33	1
10	40.93	1
10.5	40.75	1
11	40.36	1
11.5	39.99	1
12	39.78	1
12.5	39.41	1
13	39.2	1
13.5	39.01	1
14	38.62	1
14.5	38.25	1
15	38.04	1
15.5	37.67	1
16	37.46	1
16.5	37.28	1
17	36.88	1
17.5	36.7	1
18	36.52	1
18.5	36.12	1
19	35.94	1

19.5	35.54	1
20	35.36	1
21	34.75	1
22	34.38	1
23	33.8	1
24	33.41	1
25	32.83	1
26	32.43	1
27	31.85	1
28	31.49	1
29	31.09	1
30	30.69	1
31	30.11	1
32	29.75	1
33	29.35	1
34	28.96	1
35	28.59	1
36	28.19	1
37	28.01	1
38	27.61	1
39	27.22	1
40	26.85	1
41	26.64	1
42	26.27	1
43	26.06	1
44	25.69	1
45	25.48	1
46	25.12	1
47	24.9	1
48	24.72	1
49	24.54	1
50	24.14	1
51	23.96	1
52	23.74	1
53	23.56	1
54	23.38	1
55	23.16	1
56	22.98	1
57	22.77	1
58	22.59	1
59	22.4	1
60	22.19	1
72	20.85	1
84	19.87	1
96	19.29	1
108	18.93	1
120	18.35	1
132	18.14	1
144	17.95	1

156	17.77	1
168	17.37	1
180	17.19	1
192	17.19	1
204	16.98	1
216	16.79	1
228	16.61	1
240	16.61	1
252	16.4	1
264	16.4	1
276	16.22	1
288	16.22	1
300	16.03	1
312	16.03	1
324	15.82	1
336	15.82	1
348	15.64	1
360	15.64	1
372	15.45	1
384	15.45	1
396	15.45	1
408	15.45	1
420	15.24	1
432	15.24	1
444	15.24	1
456	15.06	1
468	15.06	1
480	15.06	1
492	15.06	1
504	14.87	1
516	14.87	1
528	14.87	1
540	14.87	1
552	14.66	1
564	14.66	1
576	14.66	1
588	14.66	1
600	14.48	1
660	14.48	1
720	14.3	1
780	14.08	1
840	14.08	1
900	13.9	1
960	13.72	1
1020	13.72	1
1080	13.5	1
1140	13.32	1
1200	13.32	1
1260	13.14	1

1320	12.92	1
1380	12.92	1
1440	12.92	1
1500	12.74	1
1560	12.56	1
1620	12.34	1